U.S. Department of Energy

CAIS Web User Guide

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Submitted by:
Energy Enterprise Solutions
20440 Century Blvd.
Germantown, Maryland 20874
Phone 301-916-0050 Fax 301-916-0066
http://www.eesllc.net

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Prepared by:	Ken Baker, Ruth Ann Smith, and Scott Mucci Energy Enterprise Solutions, LLC
Reviewed by:	Ken Rowe Energy Enterprise Solutions, LLC
Approval:	Ruth Ann Smith CAIS Team Manager Systems Development and Engineering Energy Enterprise Solutions, LLC

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1. Overview

This guide provides an overview of the Department of Energy (DOE) Condition Assessment Information System (CAIS) Web application. It is designed for experienced engineers and technicians familiar with facility and infrastructure inspection procedures and terminology. This training program will instruct the inspectors on the use of system protocols and the procedures for loading and reporting data in CAIS. It will not cover inspection techniques.

These subsections provide a brief history and description of the Condition Assessment Survey (CAS) and CAIS processes; their objectives; drivers; and evolution to CAIS Web.

Condition Assessment Survey (CAS)

The CAS is a systematic inspection process to determine asset conditions. The assets can be buildings, trailers or other structure and facilities or infrastructure systems. The process covers all real property owned by the Department. The CAS primary objective is to assist all DOE sites in assessing the condition of their assets. CAS is based on a set of consensus standards, methods, and technologies to conduct the surveys, and to collect and disseminate the survey and inspection information. CAS information is assembled in a database (the CAIS) that provides basic information necessary for the maintenance and asset management programs. The CAS program development was started when the Capital Asset Management Program (CAMP) got underway in 1991. CAS was required at all sites during its early stages of implementation. When Life Cycle Asset Management (LCAM) order replaced CAMP, sites used contractors, their own condition assessment programs or did nothing. The Real Property Asset Management Order (RPAM), issued in 2003, required condition assessments to be performed on all real property at least once during any 5 year period using inspection methods based on industry standards. The cost of deficiencies identified in the assessment must be estimated using the CAIS database or a nationally recognized cost estimating system.

Condition Assessment Information System (CAIS)

The CAIS is designed for experienced engineers or technicians familiar with facility and infrastructure inspection procedures and terminology. CAIS is a deficiency database with standardized reports for reporting deficiencies and deferred maintenance costs to the Facility Information Management System (FIMS) database. Its cost estimates rely on RS Means cost data, over 53,000 line items, which are updated annually. These costs provide funding justifications for facility repair and replacement. The CAIS facility condition indexes use the system-generated deferred maintenance costs and the DOE version of RS Means CostWorks software program.

Because FIMS is the Real Property database of record for DOE, whenever property information is changed in FIMS, these updates need to be reflected in CAIS. One particularly important scenario is when the Replacement Plant Value (RPV) values are updated annually in FIMS. In addition to these updates, new property records entered into FIMS (as well as properties which are archived in FIMS) need to be reflected in CAIS.

Updating CAIS when FIMS is updated is accomplished via a database trigger in FIMS. No data in FIMS is modified. The CAIS administrator can easily keep track of FIMS updates that have affected the CAIS database. The Asset List Updated by FIMS Report enables the CAIS Administrator to track these updates.

1.1 Background

DOE directives mandate a constant awareness of the condition of facilities throughout the complex. Sites have conducted facility assessments using a variety of tools and techniques, resulting in a great variance in the level of analysis. Some sites report in exhaustive detail, whereas others provide only high-level summary information. DOE has sponsored the development of CAS/CAIS since 1991 to provide the sites with an agency-wide standard for reporting site assessments. The versions of CAIS since 1991, Site CAIS, CAIS 5.3 and now CAIS Web, support DOE inspection methodologies and provide the sites with a reliable, consistent approach to gathering and reporting deficiencies. The CAIS Web application provides automated assistance for the CAS program.

CAIS is used to capture condition assessment data from DOE facilities located throughout the U.S. CAIS users can apply costing functions to assessment data to determine estimated costs to repair the deficiencies. CAIS can accommodate locally defined supplemental costs for completing the repair and can make adjustments to compensate for variations in local labor and material costs. CAIS reports provide funding justifications for facility repair and replacement projects.

CAIS consists of the following modules that support inspection, costing, and reporting:

- Using CAIS
- Inspection
- Costing
- Reporting
- Projects
- Interfaces
- Table Maintenance
- Special Features/Products

1.2 CAIS Web

The ability to manage the life cycle of site assets has been requested by the Condition Assessment Survey (CAS) user community and CAIS Web provides the foundation for this activity. CAIS Web uses a central Oracle database that is hosted at the DOE Germantown Computer Operations Center. CAIS Web offers functionality similar to that found in the previous non-web version of CAIS.

Some features to note are:

- Site data can not be viewed or updated by any other site;
- Site-specific data (cost adjusters, etc.), unique to each site, will continue to exist and no other site may view or update that data;
- New CAIS users will continue to have their site asset information preloaded in CAIS Web. New users should review all their asset data, to add information that is necessary for inspections and condition assessment reports.

1.3 Introduction

These subsections describe each major process in the CAIS Web application, in the order of the steps required to start up and use the system.

An overview of each process has been provided. The overviews are followed by explanations of each step in the process; including instructions for operating the CAIS Web application menus, reports, table maintenance and data transfers to FIMS and from CostWorks. The goal of this guide is to familiarize the user with the new layouts and how the most common tasks can be performed.

Since CAS/CAIS processes have been utilized since 1994, we assume that users are skilled in the CAS process. Additional information about CAS/CAIS can be found at the temporary website http://caisinfo.doe.gov.

The CAIS Web User Guide is organized in the following sequence.

Getting Started: describes what is needed to gain access to the system, including how to log in, how to log out, CAIS Web navigation techniques and who to contact for support and to answer CAS and CAIS related questions. Also included is a a system initialization sub-section that describes where to set up new users, user roles, and how to build certain data tables used to support the CAIS Web application.

Inspection: provides a brief overview of how to prepare for an inspection. It includes a Field Data Collection Sheet, minimum data needs for an inspection and how to enter assessment information in CAIS Web. It also describes how and where to transfer survey/inspection data from the collection sheets to the Site-CAIS Web screens and how to enter, filter, and edit inspection data.

Costing: describes how to perform the evaluation of survey deficiencies and translate them into repair/replacement costs.

Reports: identify and describe the standard reports available in CAIS Web. In the future, it will include an overview of the CAIS Ad-hoc reporting tools for managers to obtain CAIS data. This tool has not been developed at this time.

Projects: presents how the cost of repairs, replacements and rehab and improvement costs can be assembled into projects for future funding.

Interfaces: describes how CAIS Web imports data from the RS Means CostWorks program and exports deferred maintenance costs, facility condition index and deficient component/systems data to FIMS.

Maintenance: details how the various site, area and asset tables and pick lists are maintained and customized for site use.

Special Features/Products: deals with the Yearly Cost Update (Section 11), the FY Baseline Report (Section 12) and, in Section 13, the System Level Deferred Maintenance approach for assessing asset conditions.

1.4 Getting Started

These subsections describe what is needed to gain access to the system, including how to set up new users, how to log in, how to log out, and CAIS Web navigation techniques and who to contact if problems arise.

1.4.1. Obtaining a User Account

User accounts can be obtained by calling the CAIS Hotline at (301) 903-0873. Access to CAIS Web is restricted to users within the DOE network, or users connected via the DOE Virtual Private Network (VPN).

1.4.2. System Requirements

The CAIS Web database application is designed to run on an personal computer with a screen resolution set to 1024 x 768 or higher. The computer must have the following software items installed and configured:

- Microsoft Windows XP, Microsoft Windows XP Professional, or Microsoft Windows 2000 operating system.
- Microsoft Internet Explorer Web Brower, version 5.5. or higher
- Adobe Acrobat 6.0 software

1.4.3. Logging In

Access from an approved DOE site or network can be obtained by typing the following URL into a web browser.

Test area https://caisweb.doe.gov/CAISTEST/WelcomeServlet2.html

Production area https://caisweb.doe.gov/CAS/WelcomeServlet2.html

The login screen will then appear as shown in Figure 1.

Getting into CAIS Web requires both a User ID and a password. Both are provided by the site CAIS administrator. User IDs and passwords, previously issued for centralized CAIS, will work with the web version of CAIS.

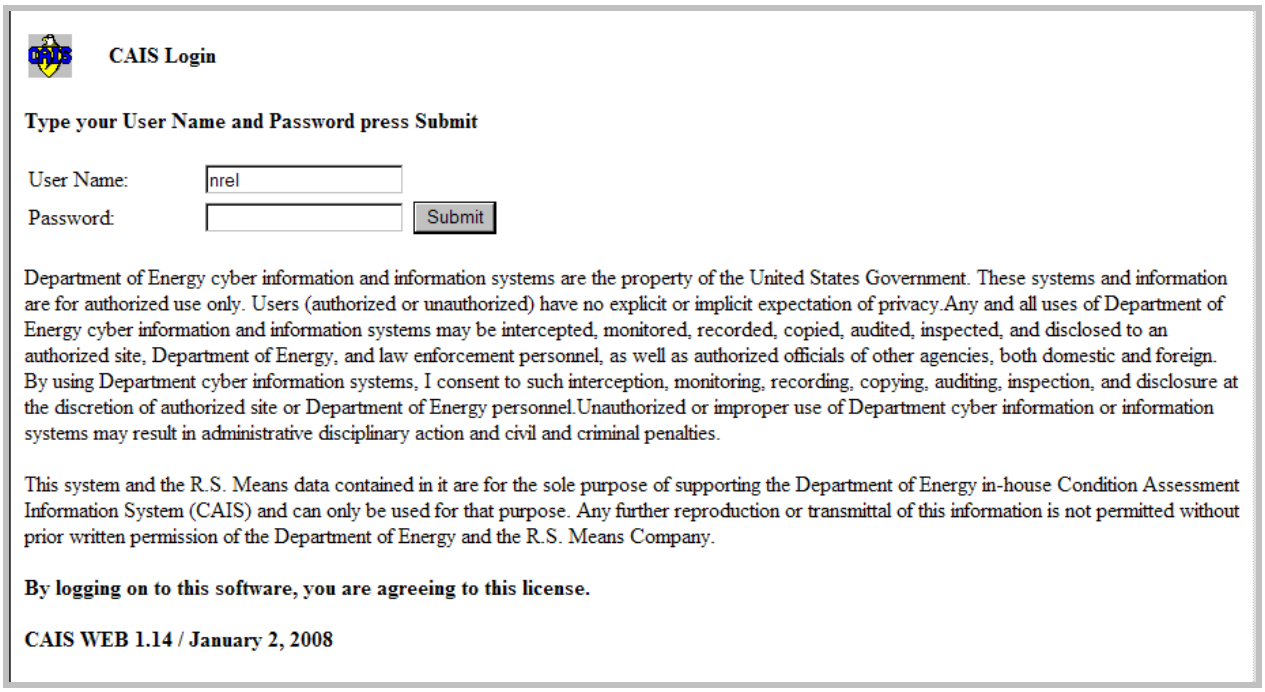

Figure 1 Login Screen

The version of CAIS Web, and the date that it was released, is provided in the lower left corner of the screen.

The CAIS Home Page shown in Figure 2 appears after a successful login. Note that a link to the latest release notes is posted on this page.

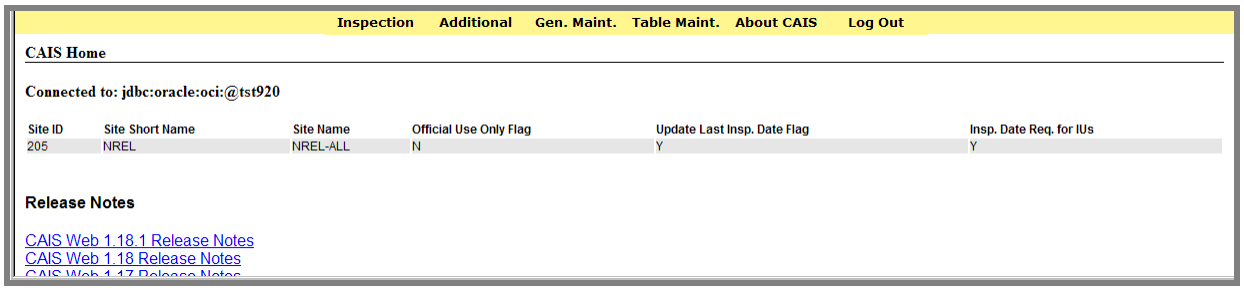

Figure 2 CAIS Home Page

1.4.4. Menu Navigation

The following terms are used for identification of the different option bars.

The Microsoft Explorer Web Tool Bar, shown in Figure 3, is part of the Microsoft Internet Explorer application. The Web Tool Bar follows the web conventions that are commonly in use.

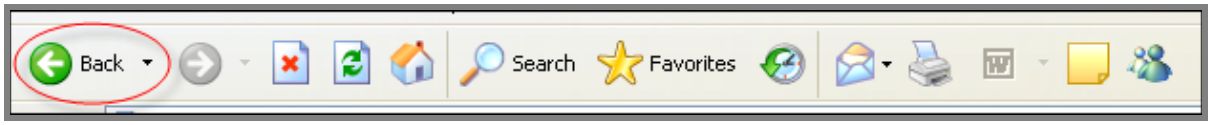

Figure 3 Microsoft Explorer Web Tool Bar

IMPORTANT NOTE: the Back button on the browser's Tool Bar should NOT be used while working in CAIS Web. Your data could be old data if the Back button is used.

The CAIS Web Menu Bar, shown in Figure 4, is used for selection of major options in CAIS.

Figure 4 CAIS Web Menu Bar

The Inspection Navigation Bar, shown in Figure 5, appears for the Inspection option. Projects and General Maintenance options each have their own navigation bars which are illustrated in Section 5 – Projects and Section 7 – Maintenance.

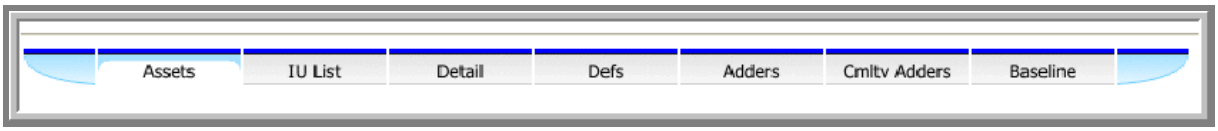

Figure 5 Inspection Navigation Bar

Navigation is done from one or more screens under the Menu Bar starting with a Menu Bar Dropdown List. Figure 6 shows all the Inspection Menu Bar Dropdown Lists. Only one dropdown list can be opened at a time.

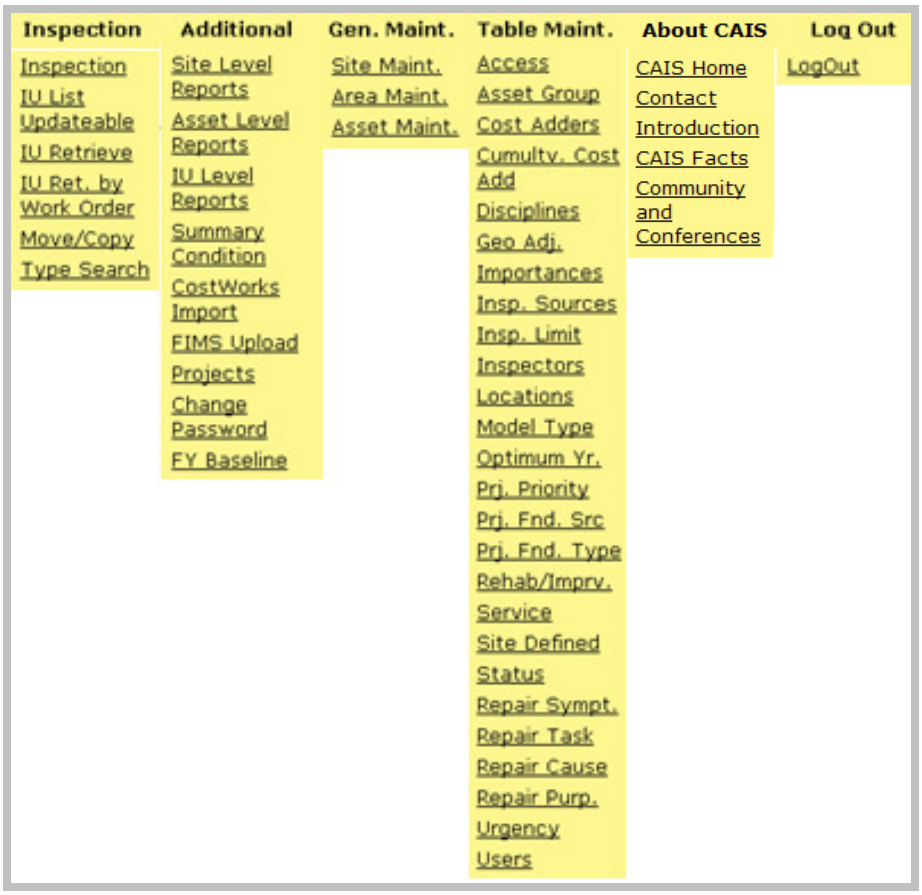

Figure 6 All Menu Bar Dropdown Selections

The Inspection option is used for accessing IU Screens and also for accessing the Move/Copy and the Type Search screens. The Additional option includes reporting, the Projects Module, CostWorks Import and Change Password. The General Maintenance option includes Site, Area and Asset Maintenance activities. The Table Maintenance option includes a large number of screens that are used to maintain various list boxes and other user-customizable information. The Contact option opens up a page with CAIS contacts and related web page links. The Log Out option logs you out of the system.

1.4.5. Main Menu

CAIS Web options are selected by clicking on any one of the six titles in the Menu Bar (shown in Figure 7).

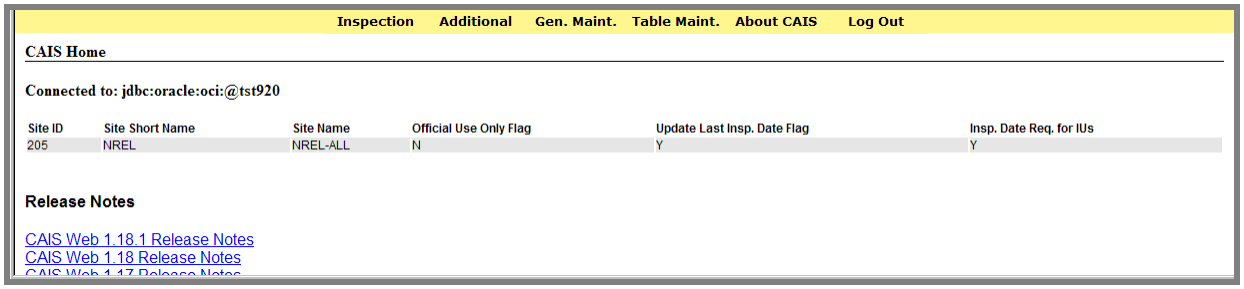

Figure 7 CAIS Home Page Menu Options

There are six menu options on the Site Screen illustrated in Figure 7: Inspection, Additional, General Maintenance, Table Maintenance, About CAIS, and Log Out.

Navigation methods are illustrated by using the Inspection option on the Menu bar.

From the Menu Bar, select the Inspection option and the dropdown menu, shown in Figure 8. Select Inspection from the dropdown list.

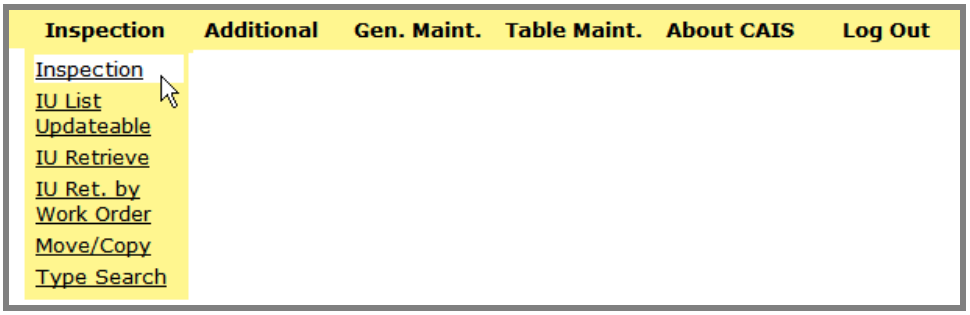

Figure 8 Inspection Dropdown List Options

The Inspection-Asset List screen, Figure 9, will appear.

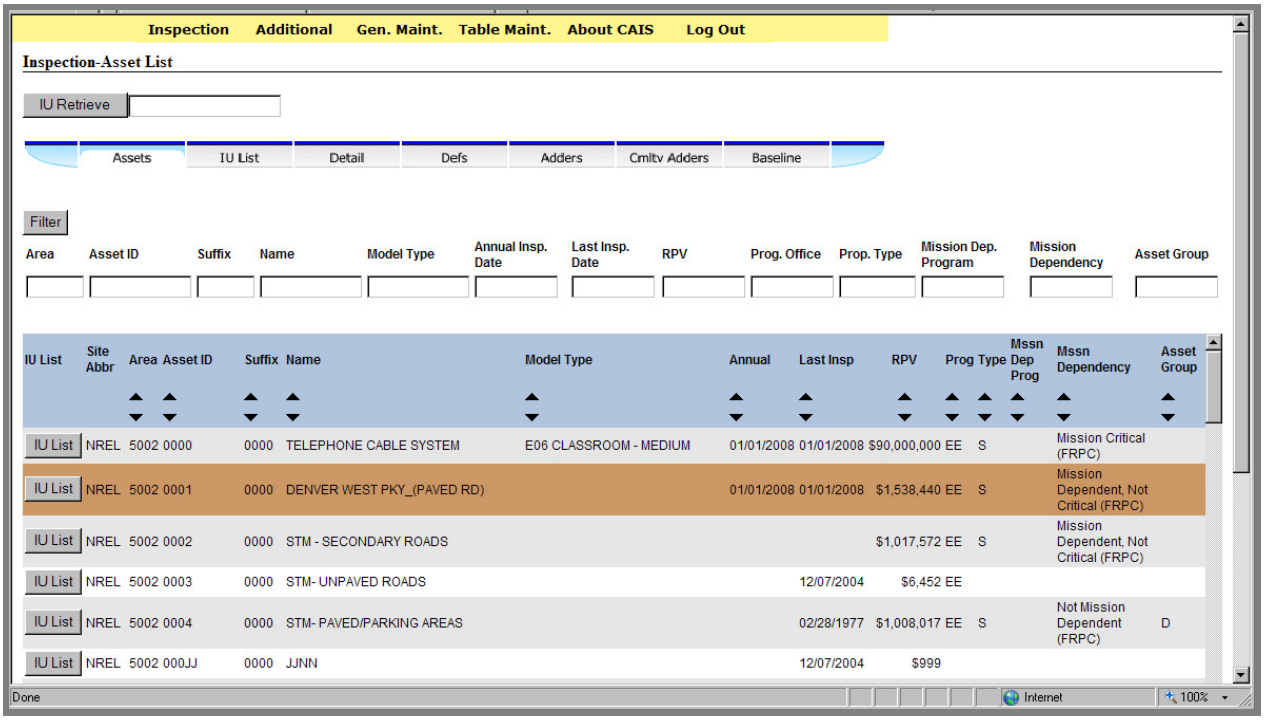

Figure 9 Inspection Asset List

The row is highlighted as you move your cursor from one row to the next for all screens.

At this point, the navigation bar options are shaded grey indicating they are not available as shown in Figure 10.

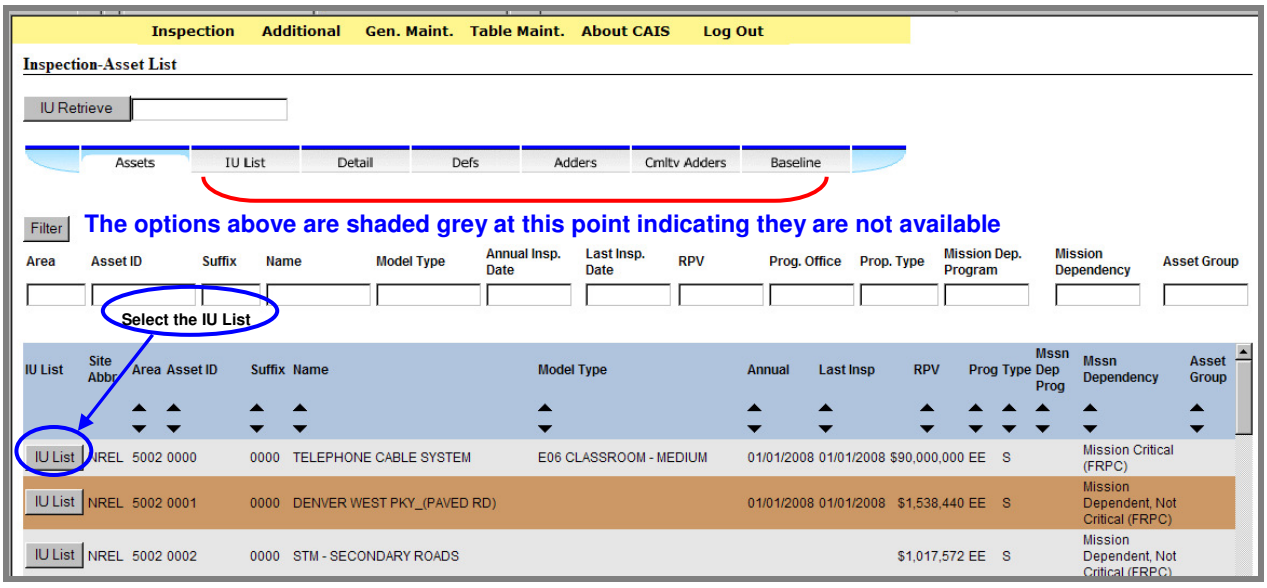

Figure 10 Inspection Asset List Screen

By selecting the IU List button in the left column of the list of assets, the Inspection Unit list is displayed as shown in Figure 11. Sorting can then be done by ascending or descending order by selecting the up or down arrow under the column headers.

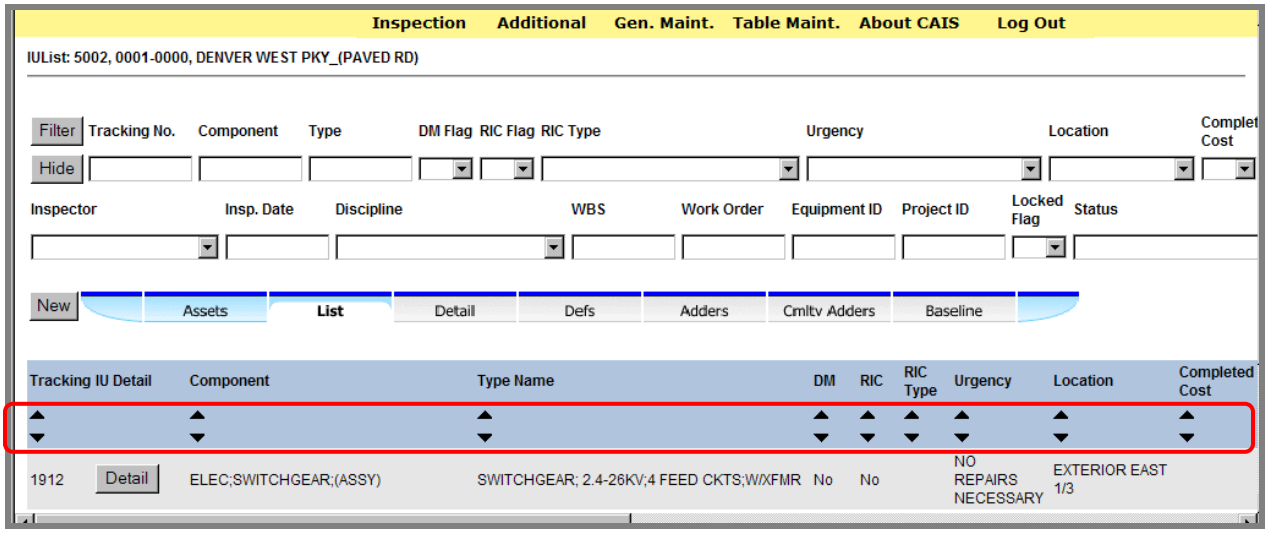

Figure 11 IU List

Select the asset you want to see by clicking on the Detail button. The IU Detail Screen will appear as shown in Figure 12.

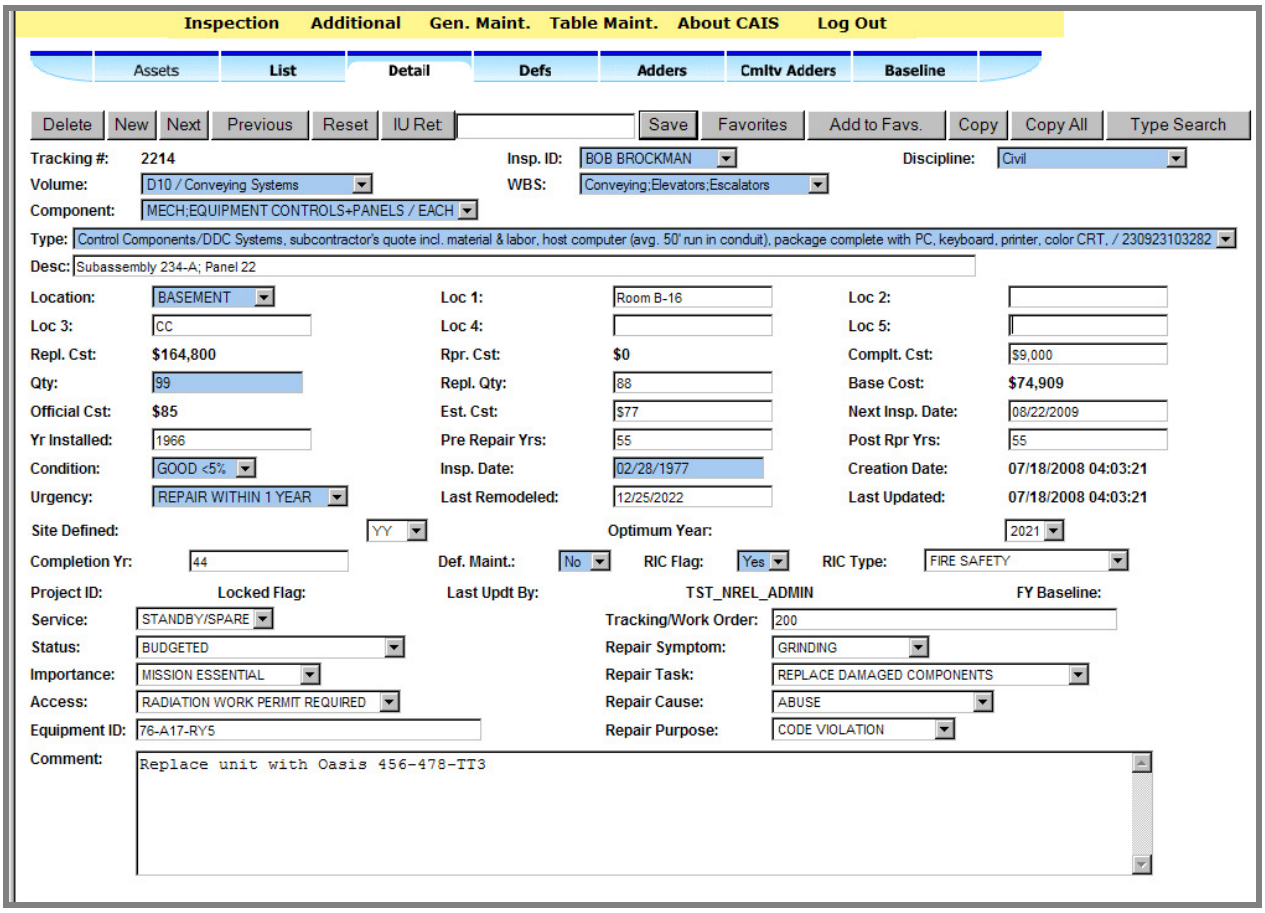

Figure 12 IU Detail Screen

The Creation Date and Last Updated dates are generated from East Coast Time.

Once you have gone to the IU Detail Screen, all the options on the Navigation Bar are now active. The Navigation Bar will no longer be gray, but blue as shown in Figure 13. So now you can select options from the Navigation Bar.

Figure 13 IU Detail Options after Selecting Detail

1.4.6. Logging Out

Exiting CAIS Web is done by selecting the Log Out option on the Main Menu, as illustrated in Figure 14. This option will log you out of CAIS Web and close out your connection to the database as shown in Figure 15.

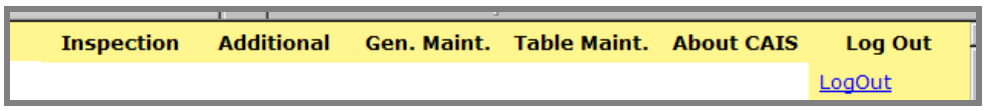

Figure 14 Log Out

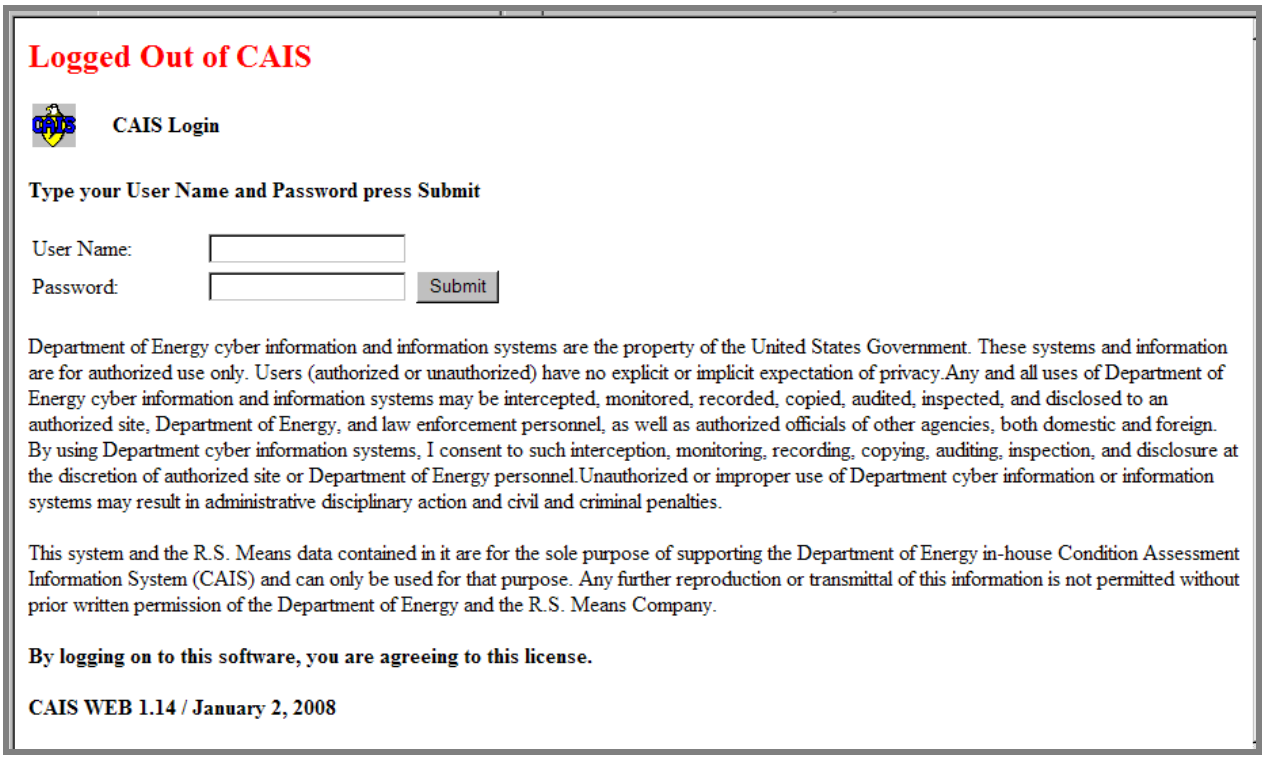

Figure 15 Log Out Screen

1.4.7. About CAIS

The About CAIS options shown in Figure 16 are an introduction to the CAIS application. They provide the application support points of contact, an introduction to CAIS and CAIS facts as well as information about the CAIS Community and Conferences.

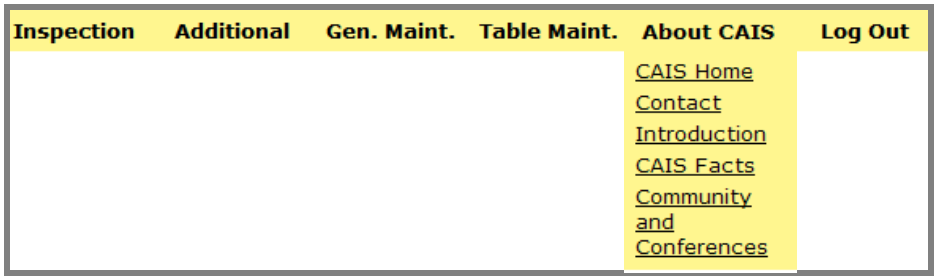

Figure 16 About CAIS Options

Selecting the CAIS Home option opens the CAIS Home Page as described in Section 1.4.3, Figure 2. Figure 17 shows the Contact option. This window provides the names of support personnel who can be contacted during normal business hours (Eastern Standard Time) when questions arise regarding CAIS.

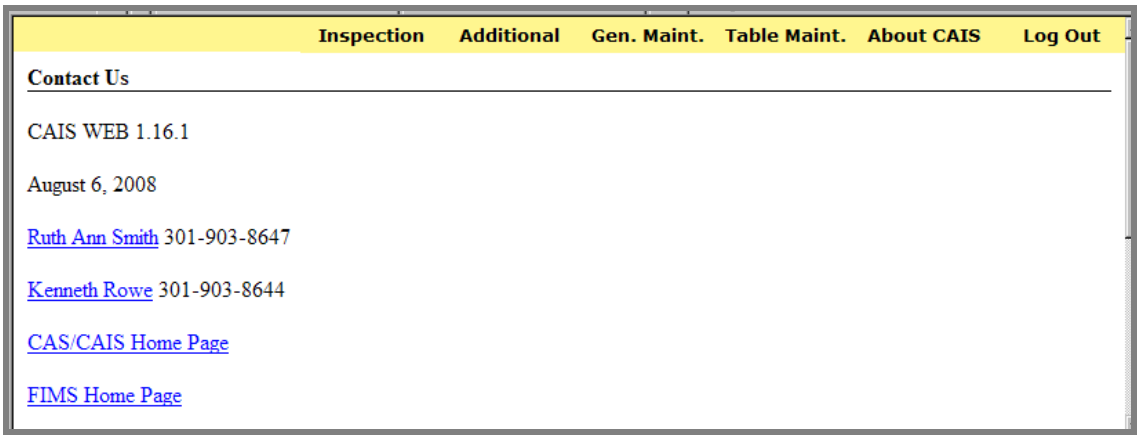

Figure 17 Contact Us Screen

Figure 18 shows the Introduction option. This window provides an overview of the system.

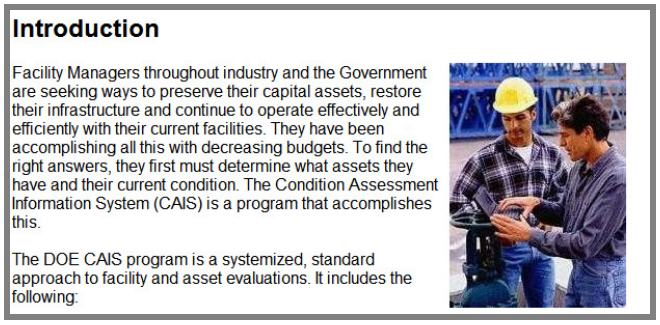

Figure 18 About CAIS – Introduction

Figure 19 shows the CAIS Facts option. This window provides an overview of CAIS costing and lists computing requirements for running the application.

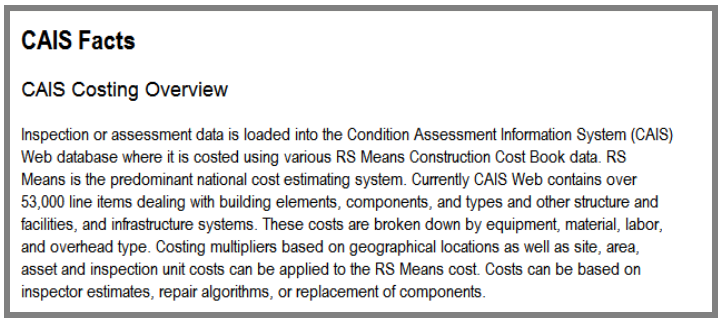

Figure 19 About CAIS – CAIS Facts

Figure 20 shows the Community and Conferences option. This window provides a list of recent meetings and the topics discussed at each. This window also provides links to CAIS documentation.

Figure 20 About CAIS - Community and Conferences

1.4.8. Changing Your Password

To change your password, select Change Password option in the Additional drop down menu (see Figure 21).

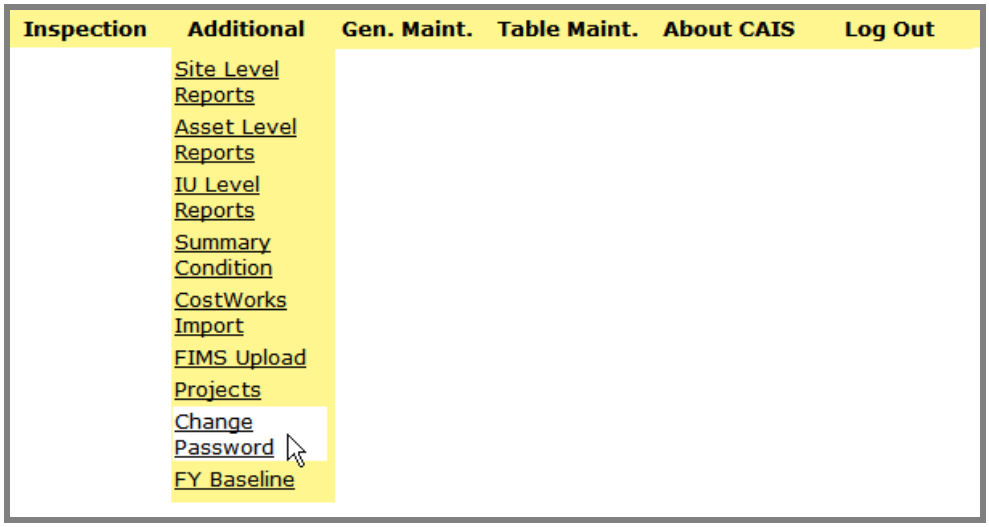

Figure 21 Change Password Selection

You will be prompted to enter a new password and confirm the password. When done, select the Save Button to save the new password.

Password guidelines are detailed in section 1.5.1.

If you use an invalid character in the password you get an error message.

1.4.9. Data Change Messages

When you save new data or changes to existing data, a message appears at the top of the screen confirming that the save has occurred. This message consists of a green check graphic and text with a green background. This message has been applied to all screens including move/copy. Examples of the messages include:

- Success. *Item Name* has been created.
- Update was successful.
- Success. *Item Name* has been moved.
- Success. Move All has been completed successfully.

1.5 System Initialization

These subsections describe what must be done to prepare for using the system; the roles of the CAIS Administrator, inspectors and data entry personnel, and view only rights.

System Initialization describes what must be done to prepare for using the system. Included are descriptions of where to set up new users and how to build certain data tables used to support the Web application.

Before the CAIS Web can be used, certain actions must be taken by the site CAIS administrator to customize CAIS to serve the needs of the individual site. Most of the security and firewall issues will have already been performed upon initialization of CAIS Web by the CAIS support contractor. However, a site may occasionally need to perform certain security and initialization tasks. You must have at least one inspector in order to create an inspection unit.

This section identifies the steps needed to set up CAIS Web and customization of some tables so the system can identify all users. All property information should be populated or transferred from Site CAIS centralized hardware. New users will obtain this information directly from an import of FIMS information. This is normally accomplished by the CAIS support contractor. The CAIS contractor creates the first administrator for each site. The site administrator must maintain and create additional roles.

1.5.1. User Roles

All CAIS users are identified by a user ID logon and password. It is recommended you adopt the DOE Guidance for passwords detailed below.

Password Standards When creating your password for CAIS Web, DOE Guidance 205.3 requires that the following password-generation method be utilized. In those cases where the user selects his/her own password (regardless of whether said password is verified by password verification software), the user should ensure that the selected password is consistent with those security features listed below that would be appropriate for a given site.

(1) Password contains at least eight non-blank characters, provided such passwords are allowed by the operating system or application.
(2) Password contains a combination of letters (preferably a mixture of upper and lowercase), numbers, and at least one special character within the first seven positions, provided such passwords are allowed by the operating system or application.
(3) Password contains a nonnumeric in the first and last position.
(4) Password does not contain the user ID.
(5) Password does not include the user's own or, to the best of his/her knowledge, close friends—or relatives—names, employee serial number, Social Security number, birth date, phone number, or any information about him/her that the user believes could be readily learned or guessed.
(6) Password does not, to the best of the user's knowledge, include common words that would be in an English dictionary, or from another language with which the user has familiarity.

(7) Password does not, to the best of the user's knowledge, employ commonly used proper names, including the name of any fictional character or place.
(8) Password does not contain any simple pattern of letters or numbers, such as "qwertyxx" or "xyz123xx."
(9) Password employed by the user on his/her unclassified systems is different than the passwords employed on his/her classified systems.

If you choose an invalid character when creating a new user, you receive an error message.

If you try to create a user that already exists, you receive an error message.

If you use an invalid character in the password you get an error message.

Three invalid attempts to log in with the wrong password will "lock" your account.

Figure 22 shows the generic error message you receive when you are unable to log on.

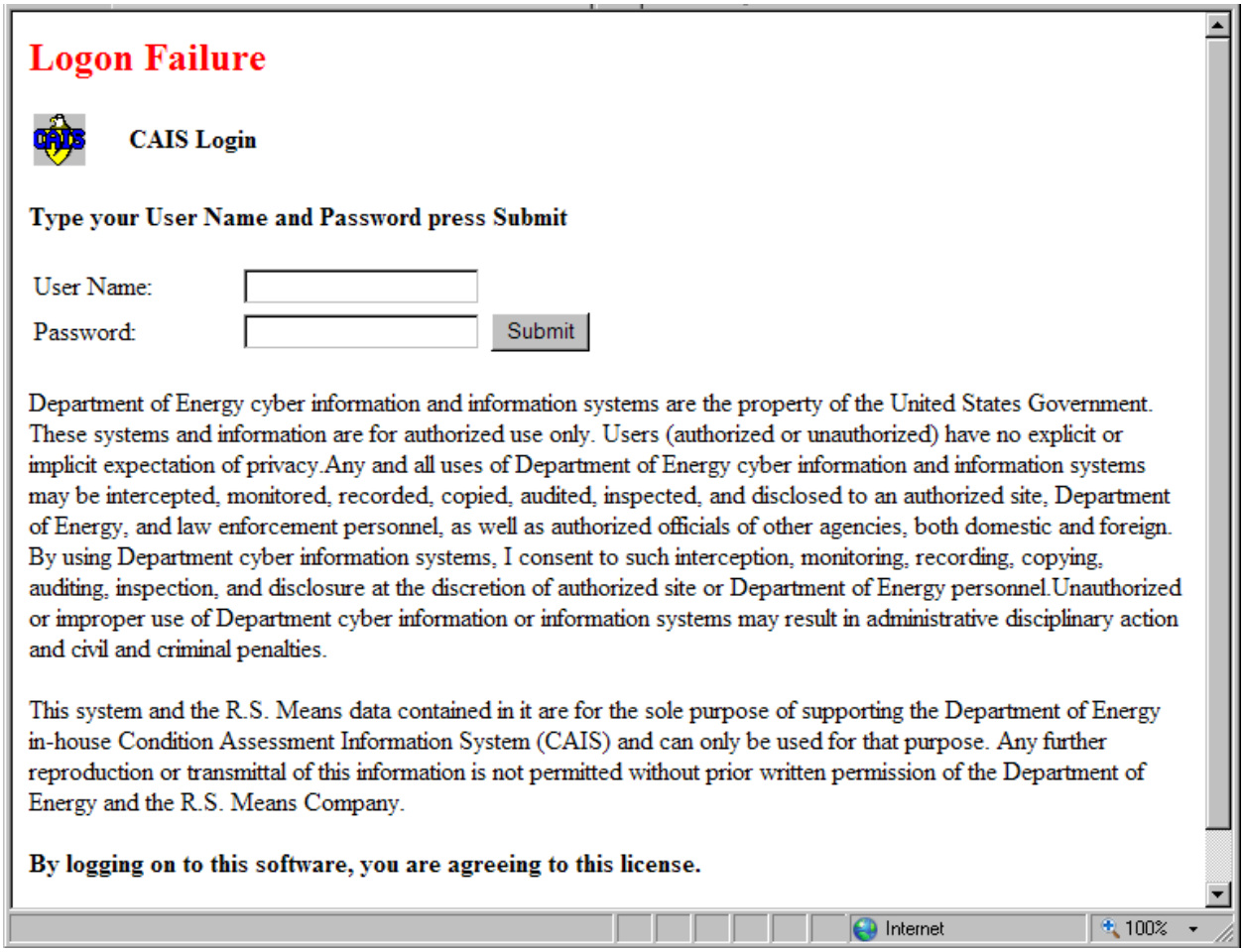

Figure 22 Logon Failure Message

You must change your password every 90 days, otherwise the password will expire as shown in Figure 23 and CAIS will automatically lock your user account. Your site's Admin User can unlock your account under the User Maintenance option. Ken Rowe (301-903-8644) or Bill Fox (301-903-8825) can also unlock your account.

Figure 23 Password has Expired

Account status is shown on the User Detail screen (see Figure 24). The status will be Open or Locked.

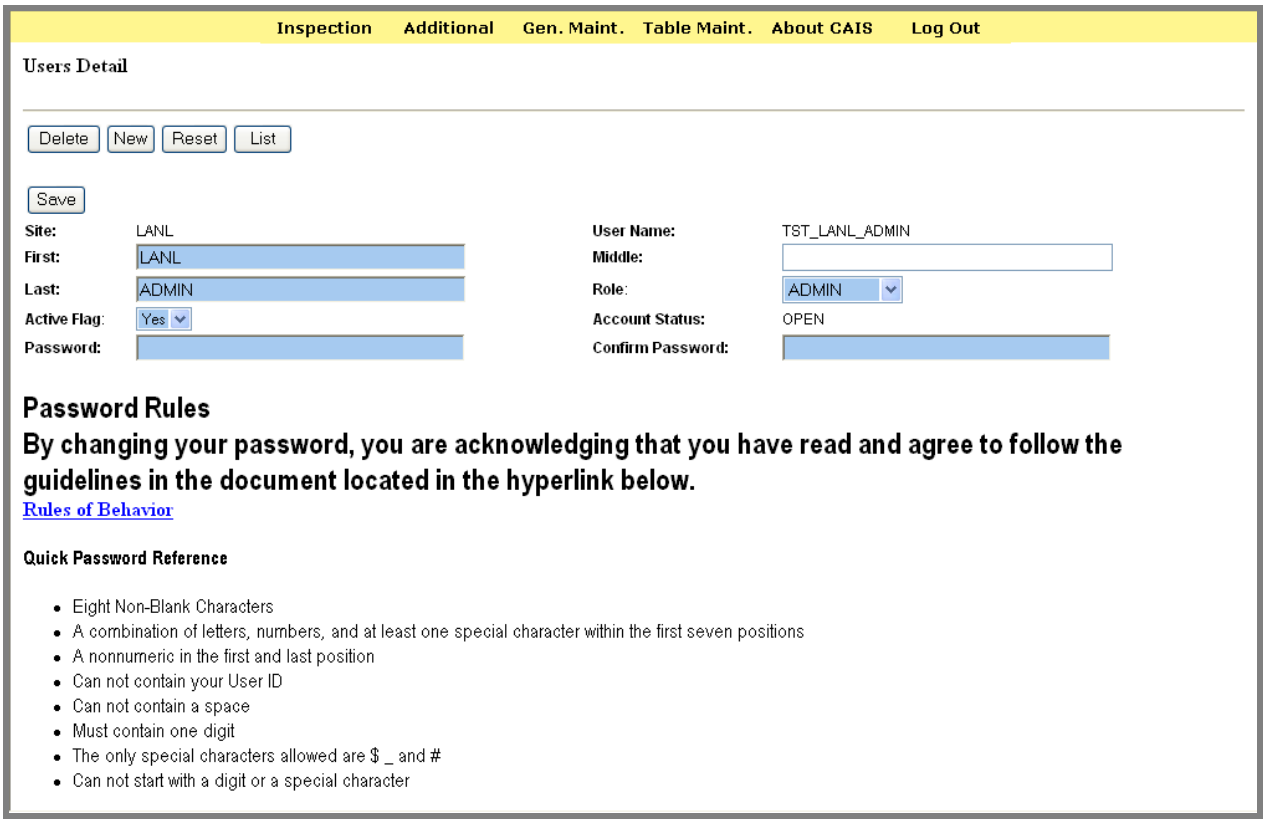

Figure 24 User Detail Screen

Users are assigned one or more roles to within CAIS: Administrator, Regular, View Only. The list of roles in CAIS, along with their related functions, appears below.

The CAIS Administrator is the central point of contact for the operation and maintenance of the CAS/CAIS program who manages the day to day operations of the CAS/CAIS. This role includes adding inspectors, report creation and editing, inspection scheduling and quality control, ensuring data calls are met, ensuring the inspection staff consists of the appropriate discipline and staff level, table maintenance, and validating inspection data sheets.

Regular (Inspectors, Data Entry) conduct the condition assessment of the DOE real properties. People in this group usually come from the shops or trades offices within the facilities or plant management departments and should be highly skilled in their trades. They complete the Field Data Collection Sheets and may enter the data into CAIS. They do the pre-inspection planning and conduct the inspection. Inspectors have to be added as users also if you want them to be able to update information in CAIS.

View roles have CAIS "View Only" rights. This group can generate reports but cannot change report data. This role is normally reserved for facility managers and project developers.

CAIS users are subject to the following Rules of Behavior for CAIS Web:

Access to the CAIS Web Software, and any associated applications, is granted to you based on certain expectations. These are:

1) Information obtained from CAIS is to be used for official DOE business purposes only.
2) Any information obtained from CAIS, whether in the form of printed reports or electronic files, is to be protected by you against any purposeful or incidental distribution to anyone not authorized access to such data.
3) In the event that you no longer require access to CAIS, or you leave the employment of DOE or its' authorized contractor organizations, you will notify the CAIS system administration staff to terminate the user ID.
4) In regards to your **Password** for application-access, you agree to follow the following guidelines when changing your Password:
    a. Password contains between 8 and 20 non-blank characters.
    b. Password contains at least one number.
    c. Password contains at least one special character within the first seven positions.
    d. Password must start and end with a letter.
    e. Password must contain at least one special character and can only be: # _ $
    f. Password does not contain the user ID.
    g. Password does not include the user's own or, to the best of his/her knowledge, close friends or relatives names, employee serial number, Social Security number, birth date, phone number, or any information about him/her that the user believes could be readily learned or guessed.
    h. Password does not, to the best of the user's knowledge, include common words that would be in an English dictionary, or from another language with which the user has familiarity.
    i. Password does not, to the best of the user's knowledge, employ commonly used proper names, including the name of any fictional character or place.
    j. Password does not contain any simple pattern of letters or numbers, such as "qwertyxx" or "xyz123xx."
    k. Password employed by the user on his/her unclassified systems is different than the Passwords employed on his/her classified systems.
5) Additionally, you agree to protect your Password in the following manner:
    a. Individuals must not share Passwords except in emergency circumstances or when there is an overriding operational necessity
    b. Individuals must not leave clear-text Passwords in a location accessible to others or secured in a location whose protection is less than that required for protecting the information that can be accessed using the Password
    c. Individuals must not enable applications to retain Passwords for subsequent reuse.
    d. Passwords must be changed:
        - At least every 90 days
        - Immediately after sharing
        - As soon as possible, but within 1 business day after a Password has been compromised, or after one suspects that a Password has been compromised

- On direction from management.

6) Protection of Personally Identifiable Information (PII)

   - Any remote access to the DOE network to access data in this system must be made through a VPN using two-factor authentication if the data you are accessing is other than your own. Two-factor authentication is where one of the factors is provided by a device separate from the computer gaining access. *Headquarters users need to contact the OCIO to be set up for VPN and two-factor authentication*.

   - All PII media other than your own (i.e., hard copy reports, information loaded to a CD, thumb drive, or any other removable electronic media) that is transported (see definition below) will be encrypted using FIPS 140-2 or greater compliant software. *ICE is the approved encryption software supplied by the OCIO for Headquarters users*.

     Transported, in addition to this and/or other electronic transmissions and physical removal, includes sending the information via e-mail and/or accessing the information from your home PC/laptop or DOE laptop or contractor provided PC/laptop from home or any other location not defined as Headquarters (see definition above). Keep in mind that if you view the information from your home or other location, this is considered to be a download and removed from the physical protected Headquarters DOE facility. This would also apply to transporting PII information between DOE protected facilities such as between Germantown and Forrestal.

   - Any and all files that contain PII that are sent via e-mail will be encrypted using Entrust.

   - PII that is stored on Laptops or removable media or at a remote location must be deleted within 90 days or when no longer needed for official DOE business purposes.

7) RS Means Costing Data and Replacement Plant Value Models are DOE and RS Means proprietary information and may not be shared with external engineering firms or with other software vendors.

8) Department of Energy cyber information and information systems are the property of the United States Government. These systems and information are for authorized use only. Users (authorized or unauthorized) have no explicit or implicit expectation of privacy. Any and all uses of Department of Energy cyber information and information systems may be intercepted, monitored, recorded, copied, audited, inspected, and disclosed to an authorized site, Department of Energy, and law enforcement personnel, as well as authorized officials of other agencies, both domestic and foreign. By using Department cyber information systems, I consent to such interception, monitoring, recording, copying, auditing, inspection, and disclosure at the discretion of authorized site or Department of Energy personnel. Unauthorized or improper use of Department cyber information or information systems may result in administrative disciplinary action and civil and criminal penalties.

   This system and the R.S. Means data contained in it are for the sole purpose of supporting the Department of Energy in-house Condition Assessment Information System (CAIS) and can only be used for that purpose. Any further reproduction or transmittal of this information is not permitted without prior written permission of the Department of Energy and the R.S. Means Company.

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1.5.2. Setting Up New Users

In order to set up new users, go to the Table Maintenance option, select Users from the dropdown list (see Figure 25).

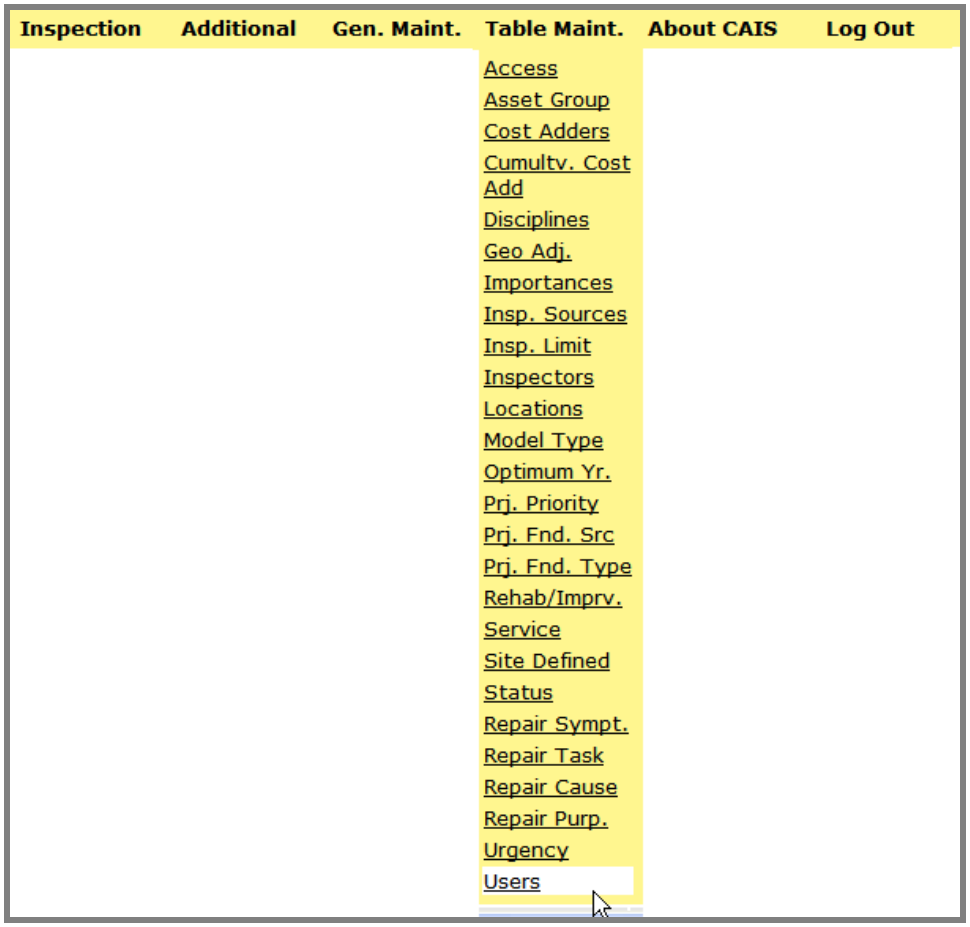


Figure 25 Table Maintenance User List Selection Screen

The User List, Figure 26, and User Detail List, Figure 27, provide important information on the user names, ID, passwords and roles (administrator, regular or read-only) assigned in CAIS.

The user list identifies all authorized users in the database, along with their assigned roles (Administrative (ADMIN), Regular, or View Only).

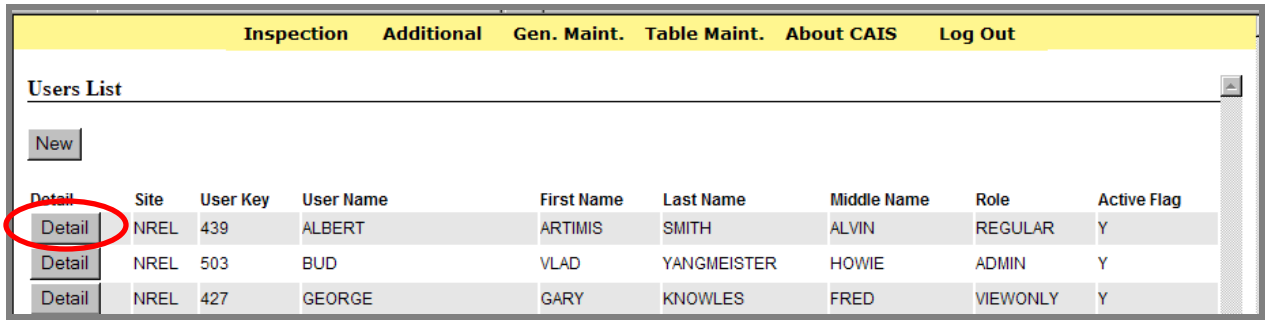


Figure 26 Table Maintenance User List Screen

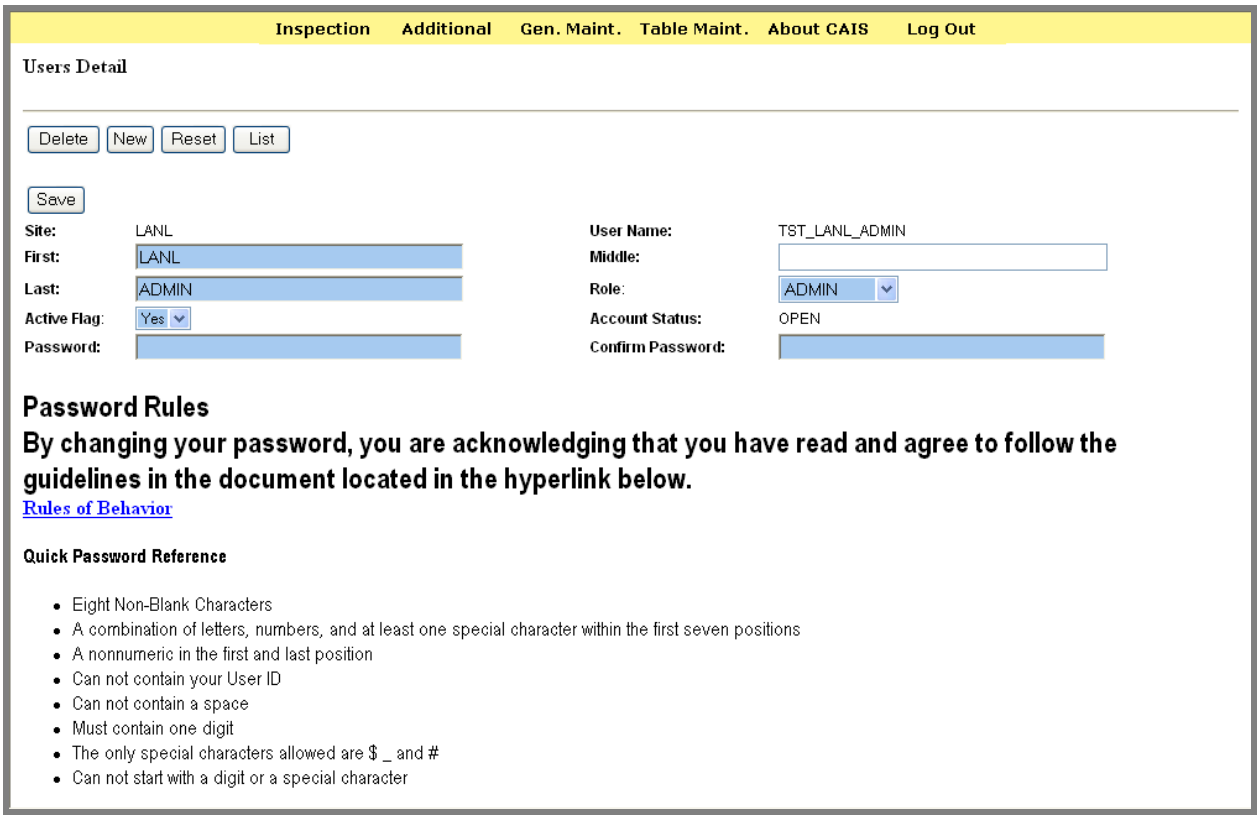


Figure 27 Table Maintenance User Details

If you choose an invalid character when creating a new user, you receive an error message.

If you try to create a user that already exists, you receive an error message.

If you use an invalid character in the password you get an error message.

When new users are created and the Administrator changes a user's password, the password is expired and the user must change it the first time that he/she logs on.

1.5.3. Building Data Tables

The Table Maintenance Menu has various selections dealing with assessment staff and users. The Inspectors list, Figure 28 and related Inspector Detail list, Figure 29, defines each inspector. Information in each form must be completed before assessments or inspections can take place.

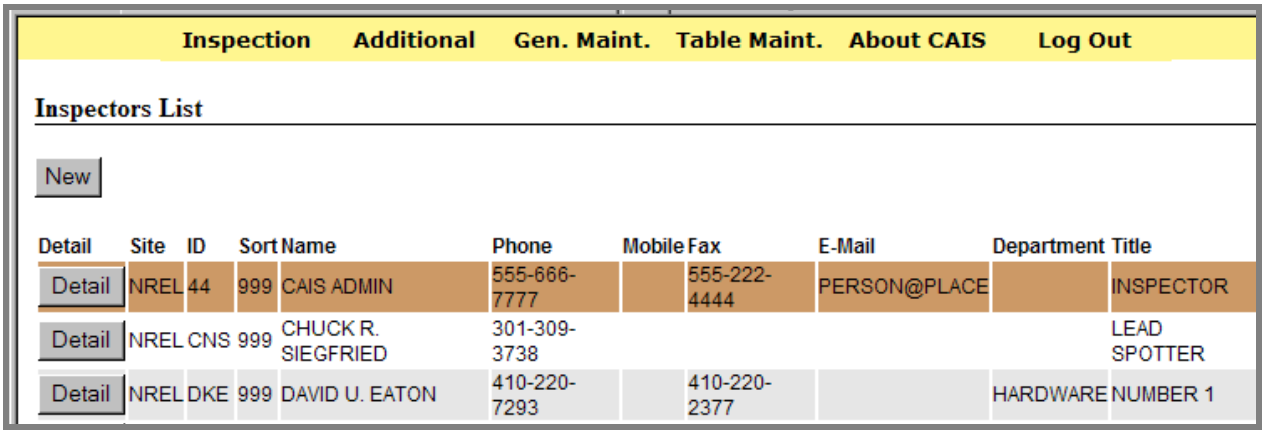


Figure 28 Table Maintenance Inspectors List

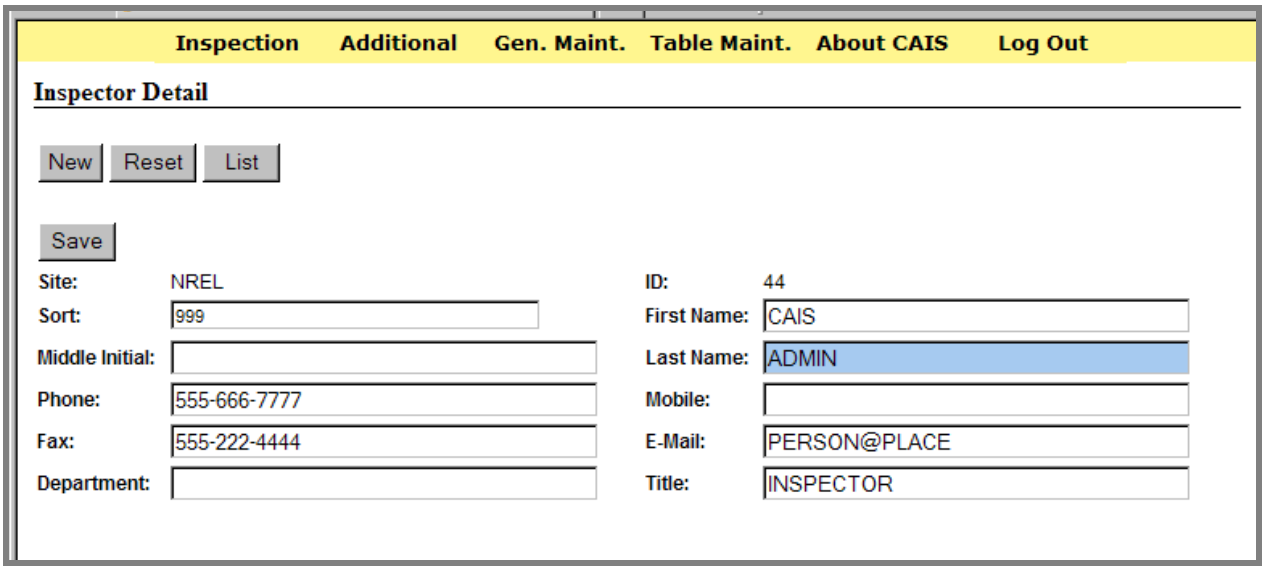


Figure 29 Table Maintenance Inspector Details

The Inspector Estimate list, shown in Figure 30, is a similar table that sets the cost limit that an inspector can estimate. For costs above this limit, administrators must use RS Means Cost Tables or CAIS costing algorithms to estimate deficiencies.

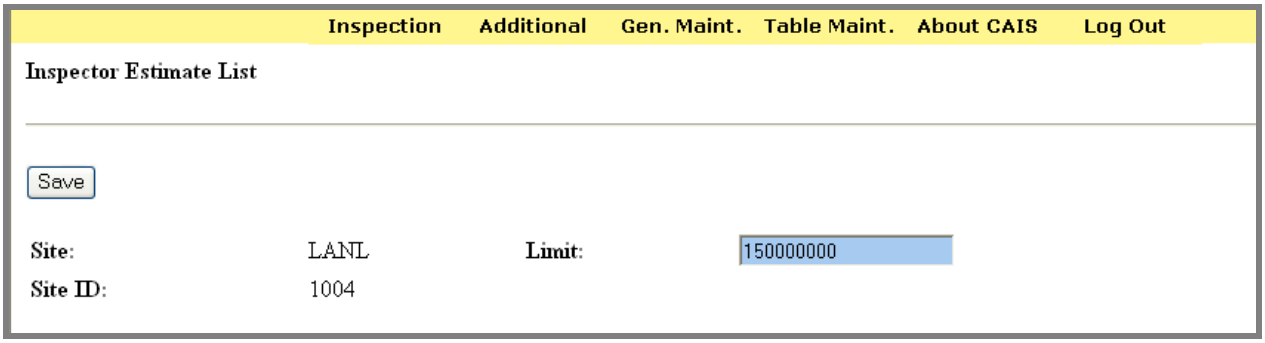


Figure 30 Table Maintenance Inspector Estimate List

2. Inspection

Information in the subsections below describes "how to prepare for an inspection" and includes descriptions of the Field Data Survey Collection Sheet; minimum data needs for an inspection; and how to enter, move/copy, and search for assessment information in CAIS Web.

2.1 Overview

This section provides a brief overview of the inspection preparation process necessary to determine "what is the condition of assets." DOE has developed a two-day course on condition assessment inspector training, and one of the major elements of this course deals with preparation for the inspection. If you are interested we urge you to attend this course. This course is centered around inspection planning and CAIS data entry and reporting. The course is not a course on how to become an inspector. It assumes you are already skilled in your inspection discipline.

New users of this software have their system FIMS information populated by the CAIS support contractor. FIMS is DOE's corporate database for real property and includes information on buildings, trailers, and other structures and facilities. CAIS Web uses information from this database to populate property identity, specification, and condition fields. CAIS web and FIMS share the same computer hardware and operating system software, located in the DOE Germantown Computer Center. Table 1 lists the FIMS fields used in CAIS.

Table 1 - FIMS Fields Used in CAIS

CAIS/FIMS Fields	FIMS DEFINITION
Added by FIMS Date	Tracks entry of new assets into CAIS from FIMS. The date in CAIS is set to the system date. This read-only field is displayed on the Asset Detail Screen.
Archived in FIMS Date	Tracks when a property is archived from FIMS. The date in CAIS is set to the system date. This read-only field is displayed on the Asset Detail Screen.
Updated by FIMS Date	Tracks updates to CAIS from FIMS updates. The date in CAIS is set to the system date. This read-only field is displayed on the Asset Detail Screen.
Area	Is a name that is assigned by the Field Office to identify an administrative subdivision of a site. An area is identified by a three-digit number.
Asset or Property ID	Is a unique control number assigned to a property.
Building Status	Is the status of the building that reflects programmatic intentions as well as the physical/operational status of the building.
Deferred Maintenance	As defined in the Statement of Federal Financial Standards #6 is "maintenance that was not preformed when it should have been or was scheduled to be and which, therefore is put off or delayed for a future period. For maintenance costs that are excluded see the FIMS Data Dictionary at http://fims.doe.gov.
Deficiency System	Indicates the deficient subsystems/work breakdown structure for a building, trailer or OSF. Up to 5 systems can be selected. The systems are identified in the order of seriousness or facility condition index (FCI). The system facility condition indexes are not reported in FIMS.
Excess Flag or Excess Indicator (Property)	Indicates (yes/no) that the Field Office/Site has designated the property as Excess now or will be Excess in the future.
Gross SF	Is the gross square footage or total floor area of an owned building/trailer in square feet (exterior wall to exterior wall).
Model Type or RPV Model	Is the number and name of the RS Means square foot model that is being used to estimate the replacement cost. It is taken from a pick list of standard model types based on the construction and use of the asset. The Model type is used to generate the summary condition or facility condition index for the major building systems or WBS categories.
Property Name	Is the name assigned to a specific property.
Replacement Cost or Building RPV	Is the current cost to replace an existing building with a new building. This value does not include the cost of the underlying land, personal property (furnishings) within the building site work; D&D cost, demolition, contamination and any production equipment. RPV is dependent on a standardized building model based on RS Means CostWorks square foot building models
Responsible HQ PO or HQ Program Office	Is the DOE headquarters program office responsible for building, trailer, land or OSF and its operations (SC, EM, etc.).
RIC or Rehab and Improvement Cost	Is the cost to rehab/improve/modernize a general purpose/conventional property to support current/planned mission activities as documented in the Ten Year Site Plan (TYSP).

CAIS/FIMS Fields	FIMS DEFINITION
Site	Is the name assigned to a geographic location that is a subdivision of the Field Office.
Usage or Use Code	Is a number code that designates the predominant current use of a real property asset.
Year Built	For DOE construction, the fiscal year that a building/trailer is accepted for beneficial occupancy. If acquiring an existing building/trailer, it is the fiscal year that a building/trailer was constructed (best estimate if unknown).

The following subsections illustrate where the FIMS site, area, and asset information is entered in CAIS Web.

FIMS data is entered on the three screens under the General Maintenance option in the Menu Bar. See Figure 31.

The Site, Area, and Asset Maintenance can be selected from the General Maintenance option as shown in Figure 31.

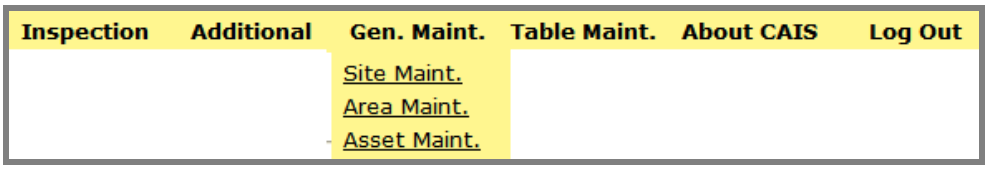


Figure 31 General Maintenance List Options Screen

The General Maintenance Site (Figure 32), Area (Figure 33) and Asset (Figure 34) screens contain information on the Site Name and abbreviation if the data has a special security classification and if the last inspection flag should be activated. The data restrictions can be made on the whole site or a specific site area.

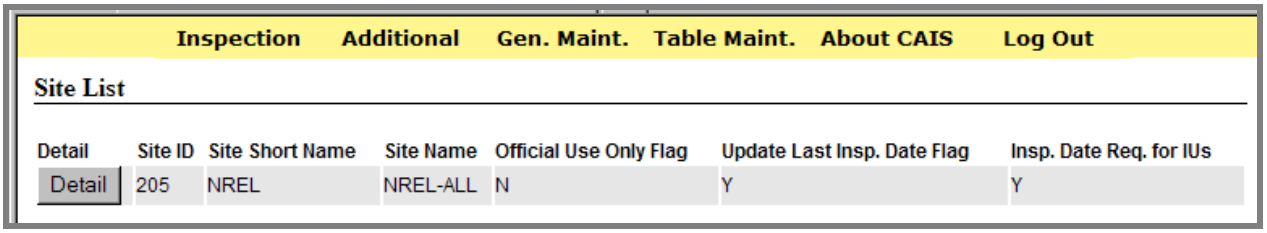


Figure 32 General Maintenance Site List

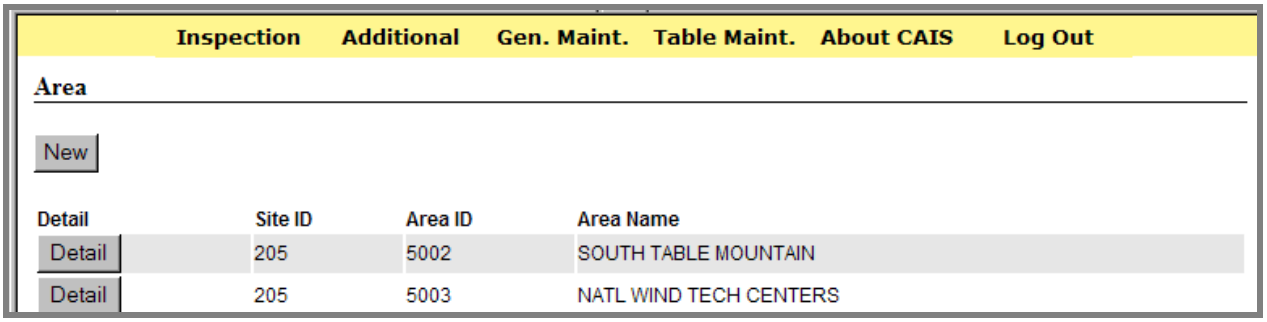


Figure 33 General Maintenance Area List

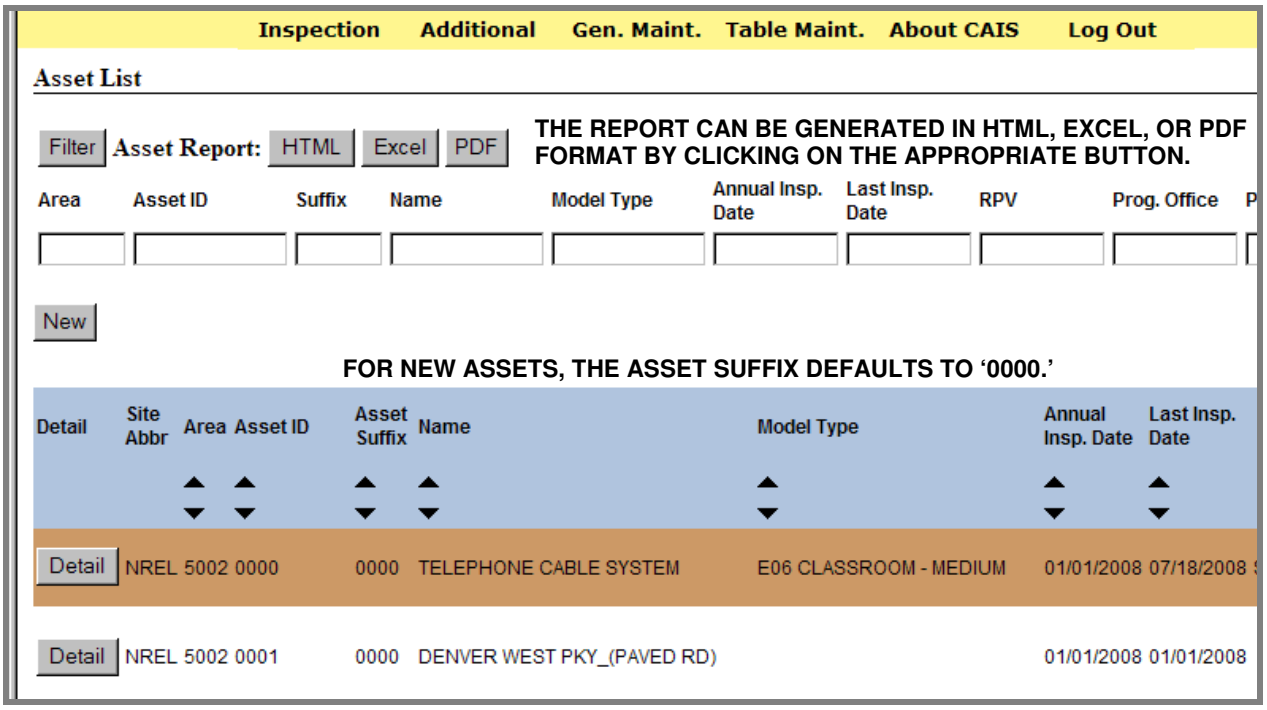


Figure 34 General Maintenance Asset List

General Maintenance Asset Detail Screen, Figure 35, contains the FIMS fields and condition assessment information pertinent to that asset. Blue fields on the screen indicate that the data is mandatory data, white fields indicate optional data, and green fields indicate the data is used for computations.

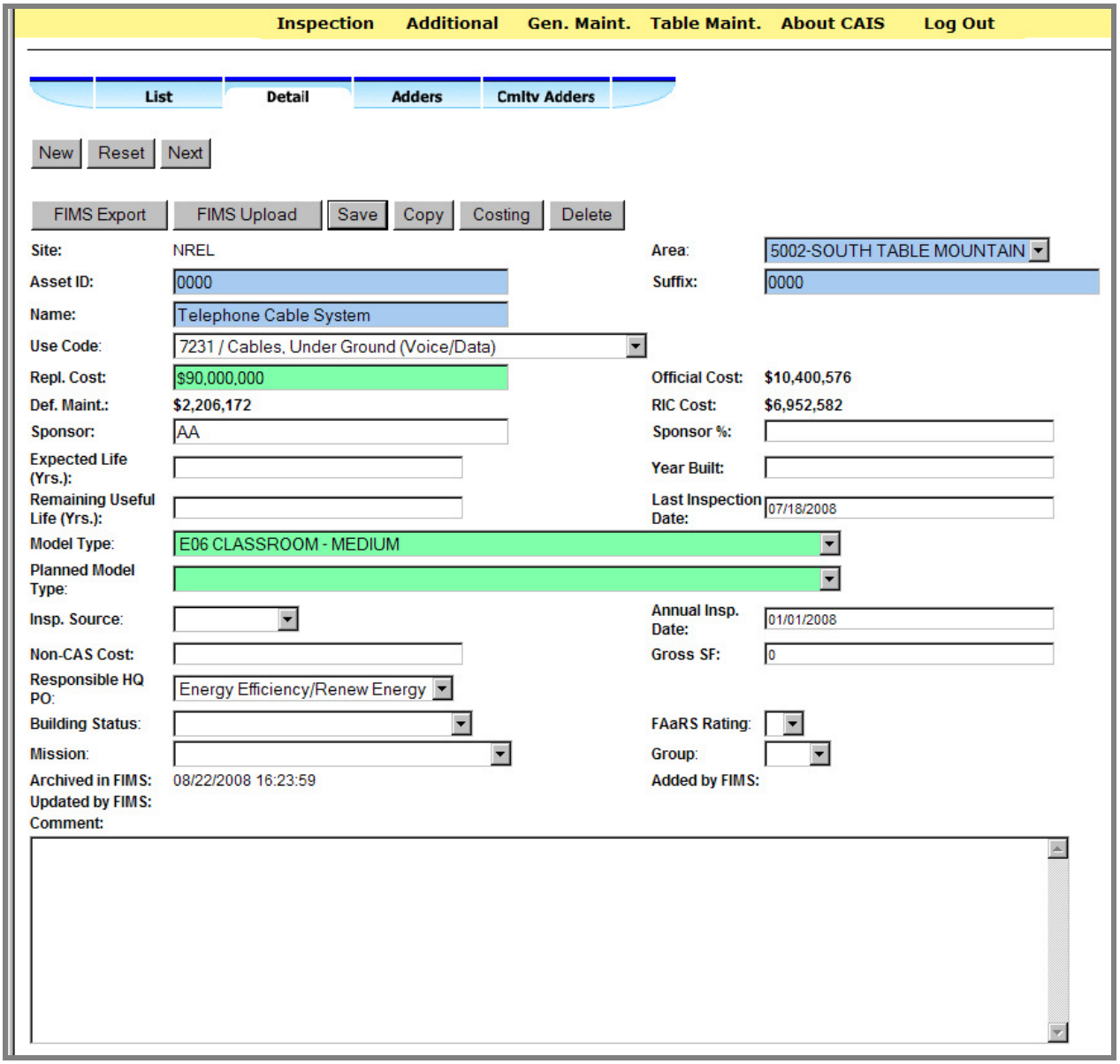


Figure 35 General Maintenance Asset Detail Screen

2.2 Pre-Inspection Planning

This subsection covers inspection preparation, data collection, and entry.

This involves review of inspection schedules for building and equipment assignments. Who is responsible for what equipment in the building? What are the requirements for conducting the inspections? This may include notification of the building manager, wearing the proper safety equipment. Review any information pertaining to the equipment or system you are inspecting. Are their previous problems, outages of the systems? Who do I call or contact to conduct the inspection?

2.3 Conduct the Inspection

All inspections must follow site procedures and follow all safety requirements. The proper notification must be made if hazardous situations are encountered.

2.3.1. The Four Basic Steps of Data Collection

There are four basic steps or questions an inspector must answer to properly conduct a condition assessment. They are the following:

1. **Who are you?** The inspector must provide their name and discipline in order to answer any inquiries regarding the condition assessment.
2. **Where are you?** The inspector must identify the asset; i.e., building, trailer OSF name and property ID, the location of the asset (area) and where in the asset the inspection is taking place.
3. **What are you looking at?** The identification of what you are looking at follows the DOE Inspection Methods and Deficiency Standards hierarchy, which states that an asset (building, road system, bridge) contains Work Breakdown Structures (WBS - roofing, electrical systems, mechanical systems) that contain Components (roof-membrane, flashing, insulation, chillers) that are of specific Types (2-4 ply non-insulated roof membrane, centrifugal chiller). Figure 36 provides a Hierarchy Diagram.

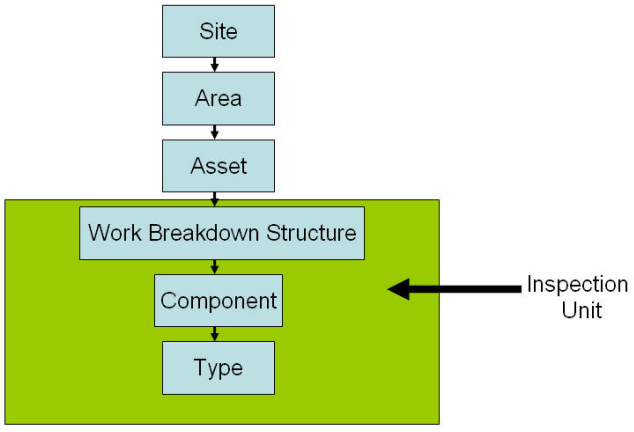


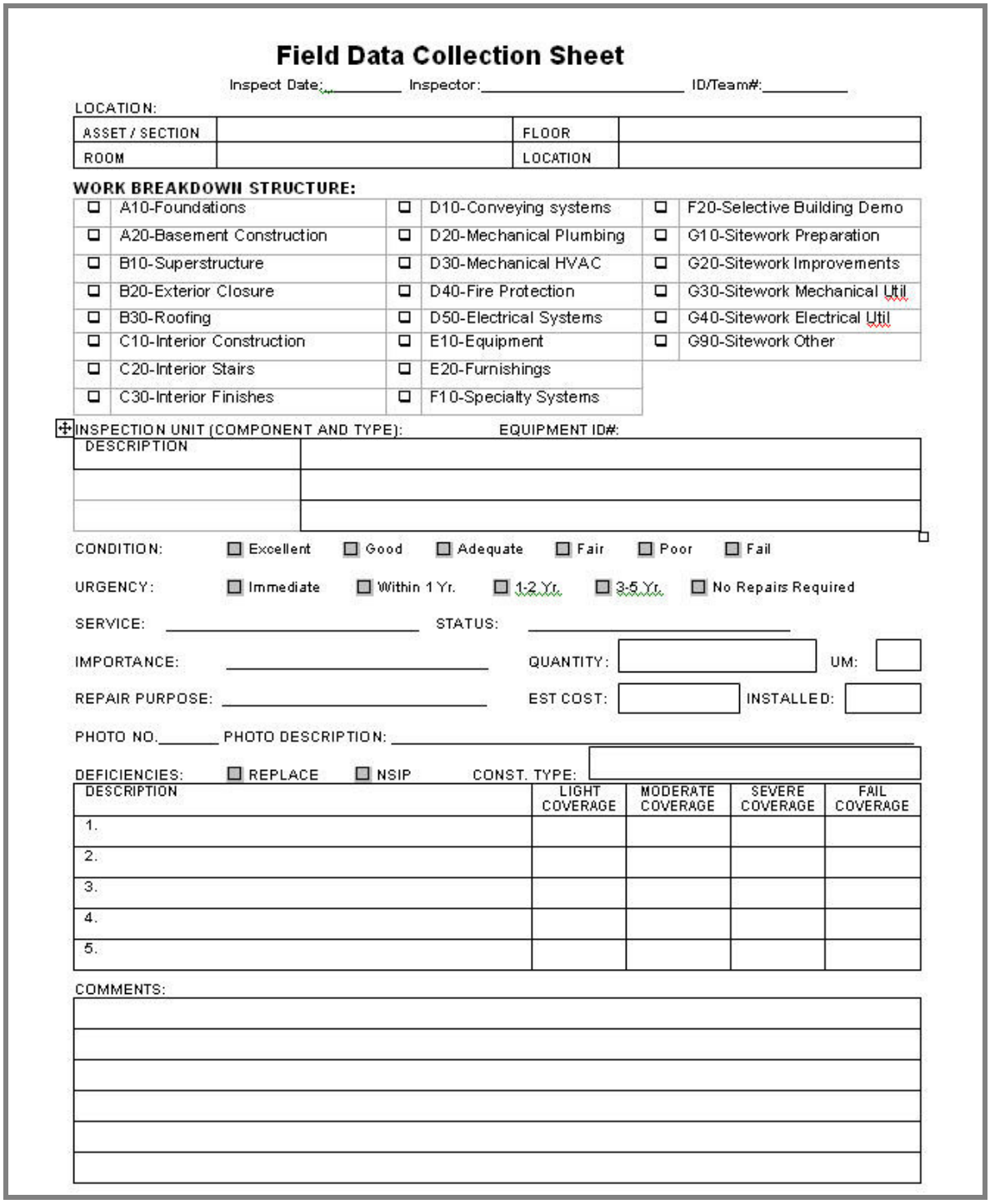
Figure 36 Hierarchy Diagram

4. **What's wrong with it?** The CAS inspections are visual inspections and follow non-invasive and non-destructive procedures. Identify the deficiency or condition that could lead to the failure of the inspection unit. Estimate the severity of the deficiency; i.e., light, moderate, severe or failure. State the urgency of the repairs; i.e., no repairs, 3-5 years, 1-2 years, less than 1 year or repair immediately. Inspectors should state why the repairs are necessary for example code violation, safety, end of useful life.

Hierarchy Definitions

- **Site** – See Table 1 for the FIMS definition.
- **Area** – See Table 1 for the FIMS definition.
- **Asset –** In FIMS, real and related personal property are represented by four major property types. They include Buildings (real), Other Structures and Facilities (real), Land (real) and Trailers/Modular Containers (personal, sometimes real). CAS inspections are conducted only on real property.
- **Work Breakdown Structure (WBS)** - a hierarchical, industry standard, classification method of defining systems and sub-systems within an asset. For example, the high-level system ROOFING contains 10 sub-systems including "BUILT-UP MEMBRANE," "SINGLE-PLY MEMBRANE," "METAL ROOFING SYSTEMS".
- **Component** - a subdivision of the WBS that provides increasing detail. For example, the components of a roof's "BUILT-UP MEMBRANE" WBS might include "FLASHING," "MEMBRANE," or "INSULATION." CAIS supports the recording of deficiencies at the component level (for example, *torn* FLASHING, *punctured* MEMBRANE.).
- **Type** - Components can contain additional information that usually specifies material or construction detail (i.e., *copper* FLASHING). The types also have attached costing information.
- **Inspection Unit** - An IU is a data composite that is utilized by CAIS to support costing and other functions. RS Means publishes annual CAIS compatible costing data that is defined by the IU. This data is utilized by CAIS in its costing algorithms.

This information must be entered on the Field data collection sheet, Figure 37, before the administrator can enter the asset deficiencies in CAIS to estimate the repair/replacement of those deficiencies.



Field Data Collection Sheet

Inspect Date:_____ Inspector:_____ ID/Team#:_____

LOCATION:

ASSET / SECTION		FLOOR	
ROOM		LOCATION	

WORK BREAKDOWN STRUCTURE:

☐	A10-Foundations	☐	D10-Conveying systems	☐	F20-Selective Building Demo
☐	A20-Basement Construction	☐	D20-Mechanical Plumbing	☐	G10-Sitework Preparation
☐	B10-Superstructure	☐	D30-Mechanical HVAC	☐	G20-Sitework Improvements
☐	B20-Exterior Closure	☐	D40-Fire Protection	☐	G30-Sitework Mechanical Util
☐	B30-Roofing	☐	D50-Electrical Systems	☐	G40-Sitework Electrical Util
☐	C10-Interior Construction	☐	E10-Equipment	☐	G90-Sitework Other
☐	C20-Interior Stairs	☐	E20-Furnishings		
☐	C30-Interior Finishes	☐	F10-Specialty Systems		

INSPECTION UNIT (COMPONENT AND TYPE): EQUIPMENT ID#:

DESCRIPTION	

CONDITION: ☐ Excellent ☐ Good ☐ Adequate ☐ Fair ☐ Poor ☐ Fail

URGENCY: ☐ Immediate ☐ Within 1 Yr. ☐ 1-2 Yr. ☐ 3-5 Yr. ☐ No Repairs Required

SERVICE: _____ STATUS: _____

IMPORTANCE: _____ QUANTITY: _____ UM: _____

REPAIR PURPOSE: _____ EST COST: _____ INSTALLED: _____

PHOTO NO._____ PHOTO DESCRIPTION: _____

DEFICIENCIES: ☐ REPLACE ☐ NSIP CONST. TYPE: _____

DESCRIPTION	LIGHT COVERAGE	MODERATE COVERAGE	SEVERE COVERAGE	FAIL COVERAGE
1.				
2.				
3.				
4.				
5.				

COMMENTS:

Figure 37 Field Data Collection Sheet

2.4 Entering Survey/Inspection Data

This section describes how and where to transfer survey/inspection data from the collection sheets to the CAIS Web screens and how to enter, filter, and edit inspection data.

Deficiency information is linked to a specific asset (building, trailer or OSF) at a site and area.

With the exception of the **Asset Suffix, Annual** and **Last Inspection Date,** all data on Figure 38 is populated through the FIMS import done by the CAIS support contractor.

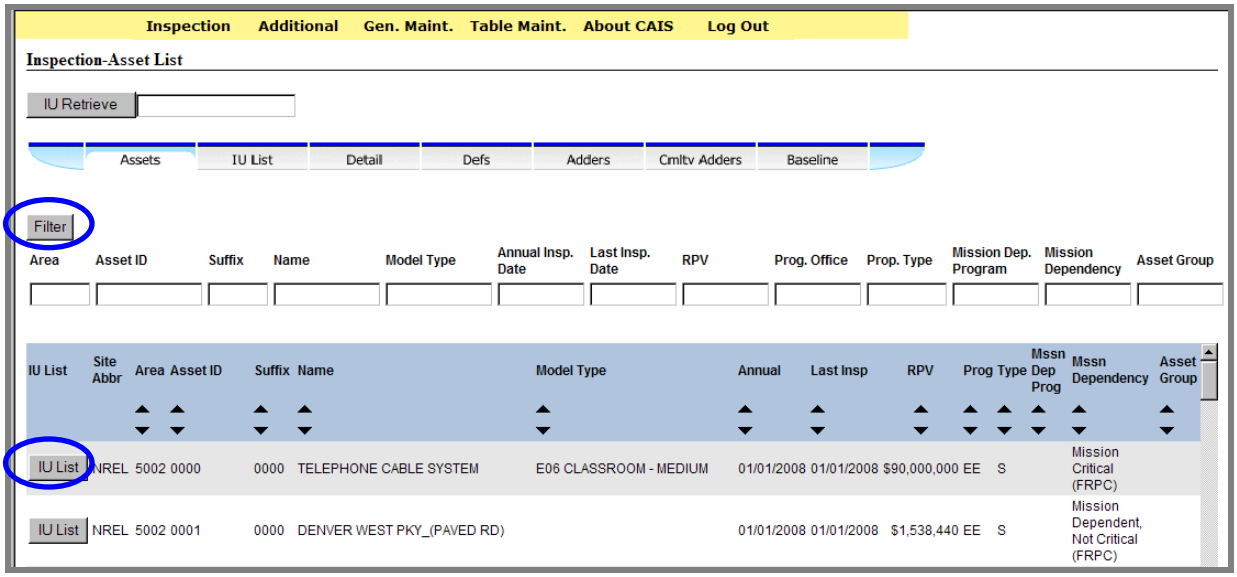


Figure 38 Inspection Asset List Screen

The Filter section provides the opportunity to shorten the Asset List displayed. Enter the desired parameter and then click the Filter button. The data will now display only the desired assets. Then select the IU List button for the appropriate asset.

When there are hundreds of IUs for a single asset, the updateable IU List can have problems displaying the information. To address this problem, the IU List is now a view only screen. By removing the drop down lists, the display problem has been eliminated. In order to keep the IU List update capability, a new menu choice, IU List Updateable, has been added (see Figure 39).

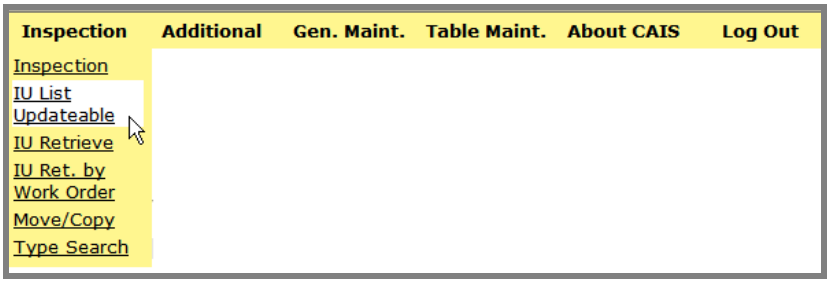


Figure 39 IU List Updateable Option

Select IU List Updateable on the Inspection menu. The Inspection-Asset Updateable List opens.

Click on the appropriate IU List button to open the Updateable IU List screen shown in Figure 40. At this point, the navigation bar options are shaded grey indicating they are not available.

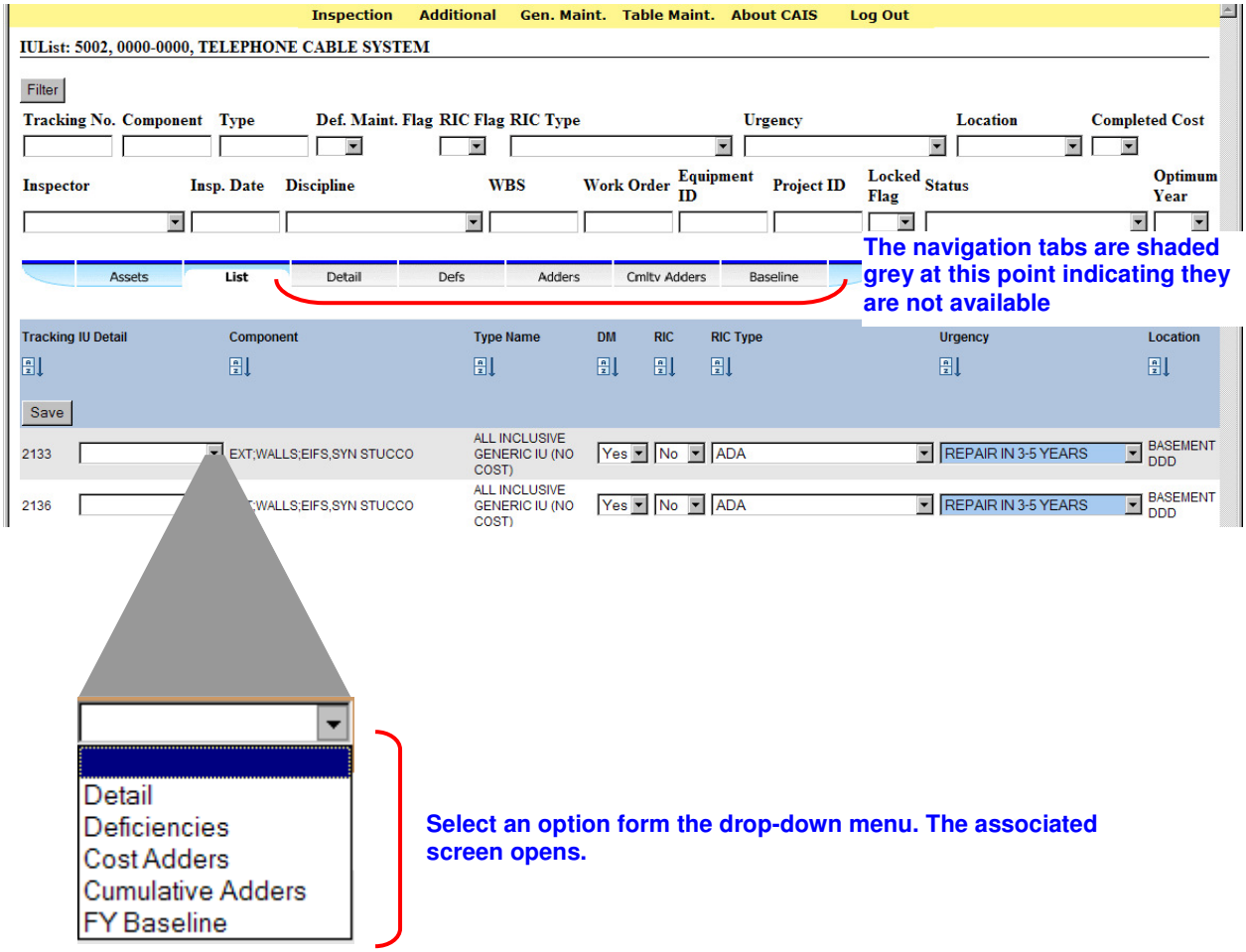


Figure 40 Updateable IU List Screen

Table 2, shown below, describes the IU list fields.

Table 2 - Typical Inspection Unit List Fields

Inspection Unit List Fields	Description
Component	The subsystem that makes up the IU.
Deferred Maintenance Flag	An indicator that indicates whether the repair/replacement cost is considered deferred maintenance. Defined in the RPAM order deferred maintenance is "maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period.
Discipline	The inspector's line of work/expertise.
Equipment ID	The identification number of the IU.

Inspection Unit List Fields	Description
Inspection Date	The date the inspection occurred.
Inspector	Who performed the inspection?
Last Updated	A system generated date field that logs the date and time an IU was edited.
Last Updated By	The individual who last updated the IU deficiency data in CAIS.
Location	Where the IU is can be found.
Locked Flag	No/Yes flag associated with projects that lock all values when an IU is part of a project.
Optimum Year	The date when the IU is expected to fail.
Project ID	The identification number of the repair or replacement project that fixes the deficiencies.
RIC Flag	Specifies if this deficiency falls under the Rehab and Improvement Cost where RIC is the cost to rehab/improve/modernize a general purpose/conventional property to support current/planned mission activities as documented in the Ten Year Site Plan. RIC is not deferred maintenance.
RIC Type	The type of Rehab and Improvement Cost.
Status	A list that defines the status of the Repairs or Replacement for the IU.
Tracking Number	A system generated unique number for the Inspection Unit identified. This unique number can be used to track the IU unit until it is corrected. This field is locked and cannot be edited.
Type	A pick list selection based on the component selected. The Type and Component define the Inspection Unit or the item being inspected. The type also links to the cost tables.
Urgency	When the repairs or replacement identified should be performed.
WBS	The major system that the IU falls under. See WBS Uniformat II chart.

Select an option from the IU Detail column drop-down list. The window associated with your selection opens. (In Figure 41, for example, Detail was selected; therefore, the IU Detail screen opened.)

Blue data indicates mandatory data, white fields indicate optional data, and green fields indicate data required for computations. This screen is the most important screen in CAIS Web because all the inspection data is entered here. Additional fields provide costing, project information, and repair data. The Comments field is limited to 2000 characters.

Once you have gone to the IU Detail Screen, all the options on the Navigation Bar are now active, so now you can select options from the Navigation Bar.

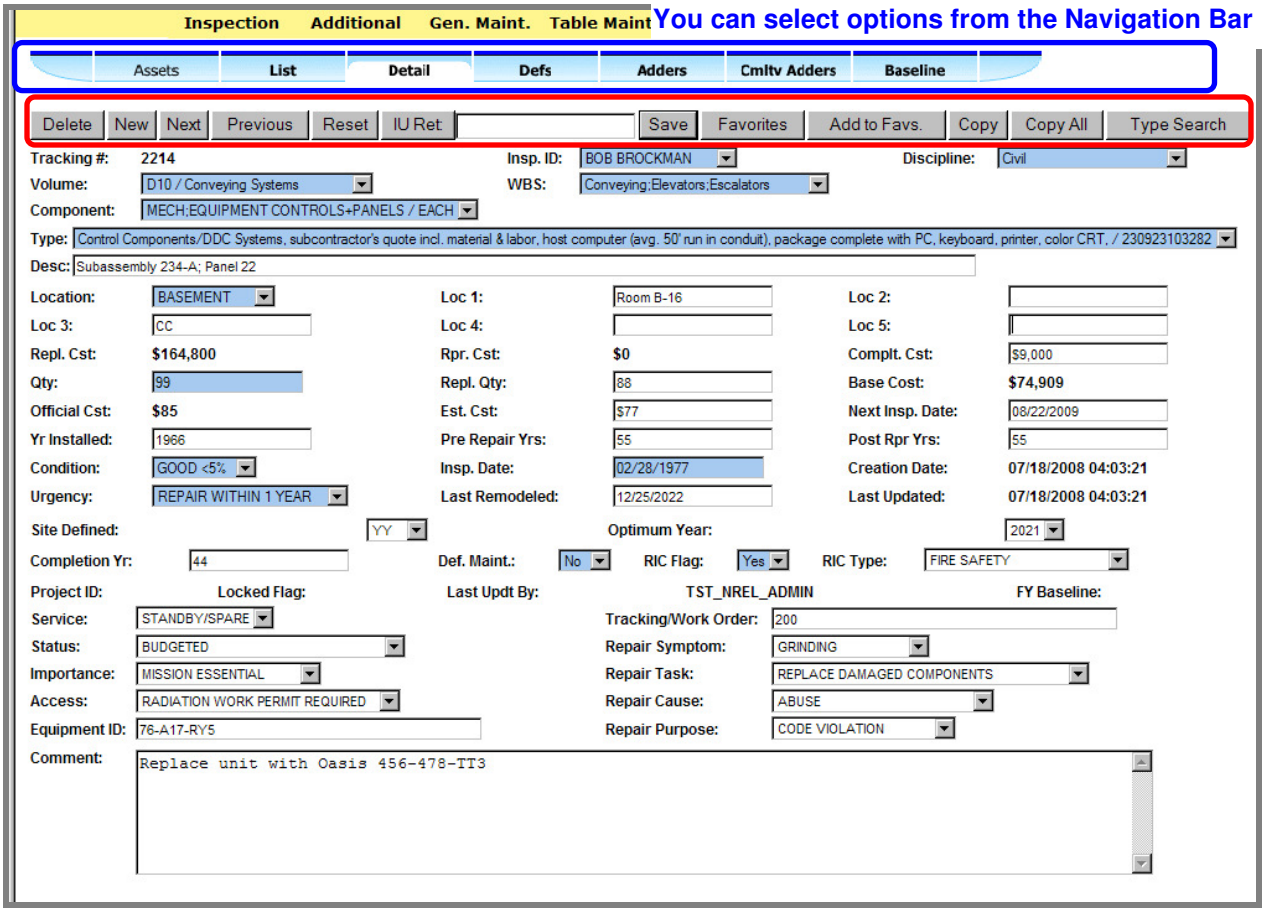


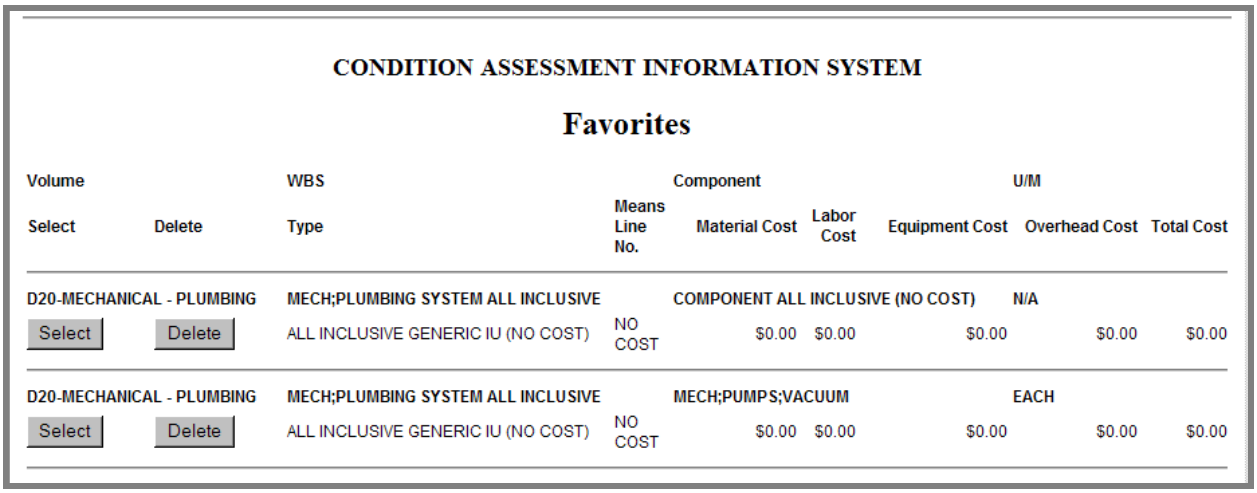
Figure 41 Inspection Asset IU Detail Screen

The options available for Inspection Asset IU Detail Screen are circled in red in Figure 41 and their descriptions follow.

- **Delete –** Deletes the current IU.
- **New** - Click this button to enter new inspection data. The Inspection-IUDetailNew screen will appear. This is a blank detail entry form with only your site filled in.
- **Reset** – Clicking to erases all data fields, allowing you to go back to the original retrieved detail after you have made changes which you decided you didn't want to save. This can only be done before you select save. Removes data you entered in the filtering fields
- **IU Retrieve –** Enter an IU value in the blank field following the IU Retrieve button and then click on the IU Retrieve button.
- **Save – S**aves any changes to In Condition Field for tracking, costing and reporting tasks.
- **Favorites –** Permits easy searches of the most common or most deficient component/ types i.e., Roofing/Built Up Membrane/SQ. roofs.
- **Add to Favorites** – Adds this WBS/Component/Type from the existing IU to the favorites list so that it may be used for creating IUs for similar deficiencies in the futures.
- **Copy** – Click to copy these fields from the current IU to use as the basis for a new IU: Inspector ID, Discipline, Volume, WBS, Component, Location, Type and Desc.
- **Copy All** – Click to copy all the current or existing IU data to use as basis for a new IU. The Creation Date and Last Updated fields are blanked in the new IU when 'copy all' is used.
- **Type Search –** Click and the Type Search window will appear. Use the various dropdown lists to find the missing Volume, WBS, Component and Type field information.

Favorites

In order to make data entry of common deficiencies more efficient, the Favorites feature is available. The IU Detail Screen has two buttons: Favorites and Add to Favorites. 'Favorites' brings up the Favorites list and 'Add to Favorites' adds the current Volume, WBS, Component, Type for the Inspection Unit to the list of Favorites. The Favorites list is shown in Figure 42:



CONDITION ASSESSMENT INFORMATION SYSTEM

Favorites

Volume		WBS		Component			U/M		
Select	Delete	Type	Means Line No.	Material Cost	Labor Cost	Equipment Cost	Overhead Cost	Total Cost	
D20-MECHANICAL - PLUMBING		MECH;PLUMBING SYSTEM ALL INCLUSIVE		COMPONENT ALL INCLUSIVE (NO COST)			N/A		
Select	Delete	ALL INCLUSIVE GENERIC IU (NO COST)	NO COST	$0.00	$0.00	$0.00	$0.00	$0.00	
D20-MECHANICAL - PLUMBING		MECH;PLUMBING SYSTEM ALL INCLUSIVE		MECH;PUMPS;VACUUM			EACH		
Select	Delete	ALL INCLUSIVE GENERIC IU (NO COST)	NO COST	$0.00	$0.00	$0.00	$0.00	$0.00	

Figure 42 Favorites

The fields for documenting deficiencies are listed in Table 3.

Table 3 - Fields for Documenting Deficiencies

Inspection Unit (IU) Detail Fields	Definition
Access	A list that define the access requirements for the IU.
Base Cost	This is a locked field that shows the base cost to repair or replace the IU identified based on the information entered. Base costs do not include any cost adders.
Comment	A free form field for the user to enter additional descriptive information related to the inspection details.
Completed Cost (Complt Cst)	Actual cost to complete the repairs, replacement of the deficiency.
Completion Yr.	The year the work was actually was performed.
Component	A pick list selection based on the WBS selected. The component defines major system or assemblies of the selected WBS.
Condition	A list that identifies the general shape of the IU under inspection.
Creation Date	A system-generated field that logs the date and time of IU creation. The time is east cost time.
Deferred Maintenance Flag	An indicator (Y/N) that indicates whether the repair/replacement cost is considered deferred maintenance.

Inspection Unit (IU) Detail Fields	Definition
Description (Desc)	A free-form data field for entering a description of the IU that better describes what the inspector is looking at.
Discipline	A pick-list selection defining the discipline of the inspector or type of inspection being performed.
Equipment ID	The identification number of the IU being inspected.
Estimated (Est)Cost	This is a numeric field where the inspector can enter an estimated cost for the repairs or replacements identified. The default value is $5,000 and can be set by the site to any desired value.
FY Baseline	This is a report that provides the deferred maintenance, rehab and improvement cost or both and the official costs to repair or replace the deficiencies of an inspection unit.
Importance	This list defines the operational importance of an IU; i.e., primary, mission essential.
Inspection (Insp) Date	The date the IU was last inspected.
Inspector ID	A pick-list selection of the available inspectors. Selecting an inspector identifies who entered or performed the inspection.
Last Remodeled Date	The date the IU was last remodeled.
Last Updated	A system-generated date field that logs the date and time an IU was edited. The time is east coast time.
Last Updated (Updt) By	The individual who edited the assessment data.
Location	A pick-list selection defining the location of the IU. Up to five free form location fields may be used to define the whereabouts of this deficiency.
Locked Flag	If the IU Locked Flag is Yes indicates IUs cannot be changed; if No means IUs can be changed.
Next Inspection Date	The date of the next scheduled inspection for the IU.
Official Cost (Cst)	This is a locked field that shows the official cost to repair or replace the IU identified based on the information entered.
Optimum Year	The time in the life cycle of an asset when maintenance actions should be accomplished to preserve and maximize the useful life of the asset. The determination is based on engineering/maintenance analysis and is independent of funding availability or other resource implications.
Post Repair Years	The estimated years of life remaining for the identified IU after the repairs or replacements have been performed.
Pre Repair Years	The estimated years of life remaining for the identified IU before the repairs or replacements have been performed.
Project ID	A number that identifies the project that has been created to repair or replace the deficient systems or components.
Quantity	The quantity; i.e., linear feet, sq feet, and cubic feet, for entering the

Inspection Unit (IU) Detail Fields	Definition
	quantity of the item identified.
Repair (Rpr) Cost	This is a locked field that shows the cost to repair the IU.
Repair Cause	A list of probable causes for the deficiencies.
Repair Purpose	A list that identifies the purpose for correcting the deficiencies; i.e., efficiency, code violation.
Repair Symptom	A list of common repair or replacement symptoms.
Repair Task	A list of standard tasks required to correct deficiencies; i.e., patch, resurface.
Replacement (Repl) Cost	A locked field that shows the cost to replace the replacement quantity selected.
Replacement Quantity	A numeric field for entering the quantity of the IU to be replaced.
RIC Flag	Specifies if this deficiency falls under the Rehab and Improvement Cost where RIC is the cost to rehab/improve/modernize a general purpose/conventional property to support current/planned mission activities as documented in the Ten Year Site Plan. RIC is not deferred maintenance.
RIC Type	A list that identifies the type of RIC cost; i.e., fire safety, upgrade, seismic.
Service	A list of IU service requirements; i.e., intermittent, continuous, stand-by.
Site Defined	A user-defined field lookup list customized to the conditions of the particular site.
Status	A list that defines the status of the Repairs or Replacement for the IU.
Tracking #	A system generated unique number for the Inspection Unit identified. This unique number can be used to track the IU unit until it is corrected. This field is locked and cannot be edited.
Type	A pick list selection based on the component selected. The Type and Component define the Inspection Unit or the item being inspected. The type also links to the cost tables.
Urgency	A list or predefined time periods when the repairs or replacements should be made.
Tracking Work Order	The maintenance mgmt system work order number that is associated with the IU.
Volume	A standard pick-list selection based on the 12-building system from RS Means. Selecting a volume filters the WBS selections.
Work Breakdown Structure (WBS)	A pick-list selection, the Work Breakdown Structure is a defined list of the major inspection areas.
Year (Yr) Installed	The date the IU was first installed.

Figure 43 displays the deficiencies associated with an IU. Enter the appropriate coverage data on the severity of the deficiency and then click Save to keep the data you entered**.** Ensure that the coverage percentage does not exceed 100% for each deficiency description. The deferred maintenance cost is estimated using a deficiency coverage percentage algorithm.

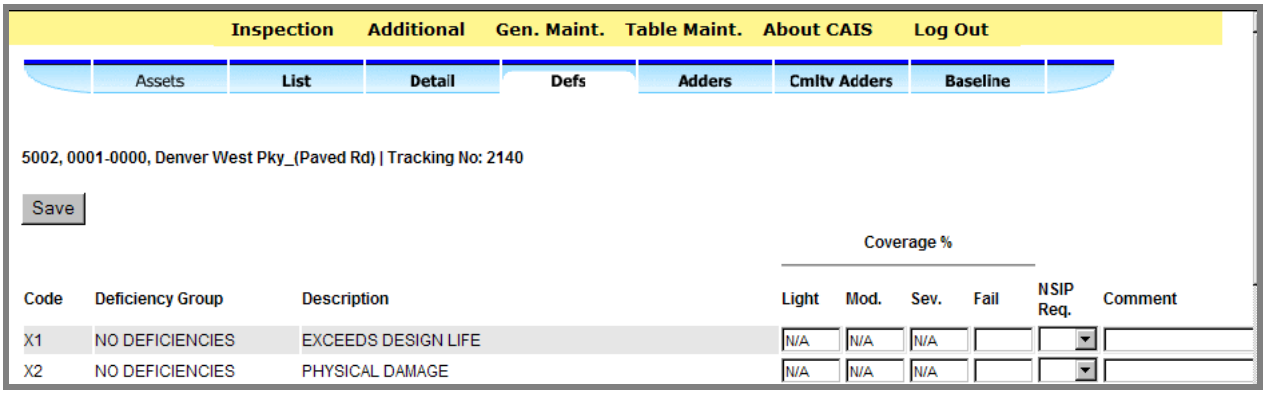


Figure 43 Inspection Unit Deficiencies Screen

Table 4 describes the deficiency coverage fields related to this screen.

Table 4 - Deficiencies Fields

Deficiencies Window Fields	Definitions
Code	A pick-list selection of the available deficiencies related to the IU selected.
Coverage %	Under the coverage field are four degrees of severity (Light, Moderate, Severe, and Fail). The Inspector indicates the percentage of coverage for the selected deficiency under the appropriate severity. Each deficiency can not exceed 100% coverage. Multiple deficiencies are possible.
Deficiency Group	This is a field describing the deficiency assigned grouping.
Description	This is a description of the deficiency.
NSIP Required	Non-standard inspection is required. This involves non-visual analysis.
Comment	A free form field where additional inspection information can be entered.

2.5 Move/Copy Inspection Units

There are many instances where assets share identical IUs. The Move/Copy Inspection Units screen enables the user to copy or move identical IUs or all the IUs between assets. Start this process by selecting the Move/Copy option on the Inspection dropdown menu (Figure 44). The Move/Copy Inspection Units screen opens as shown in Figure 45.

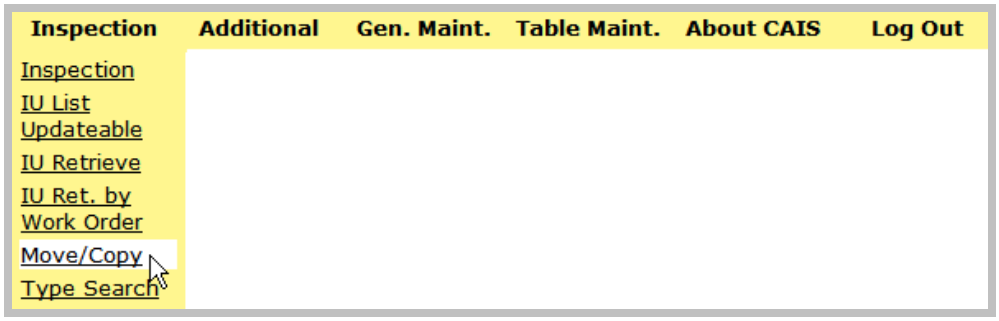


Figure 44 Inspection Move/Copy Selection Screen

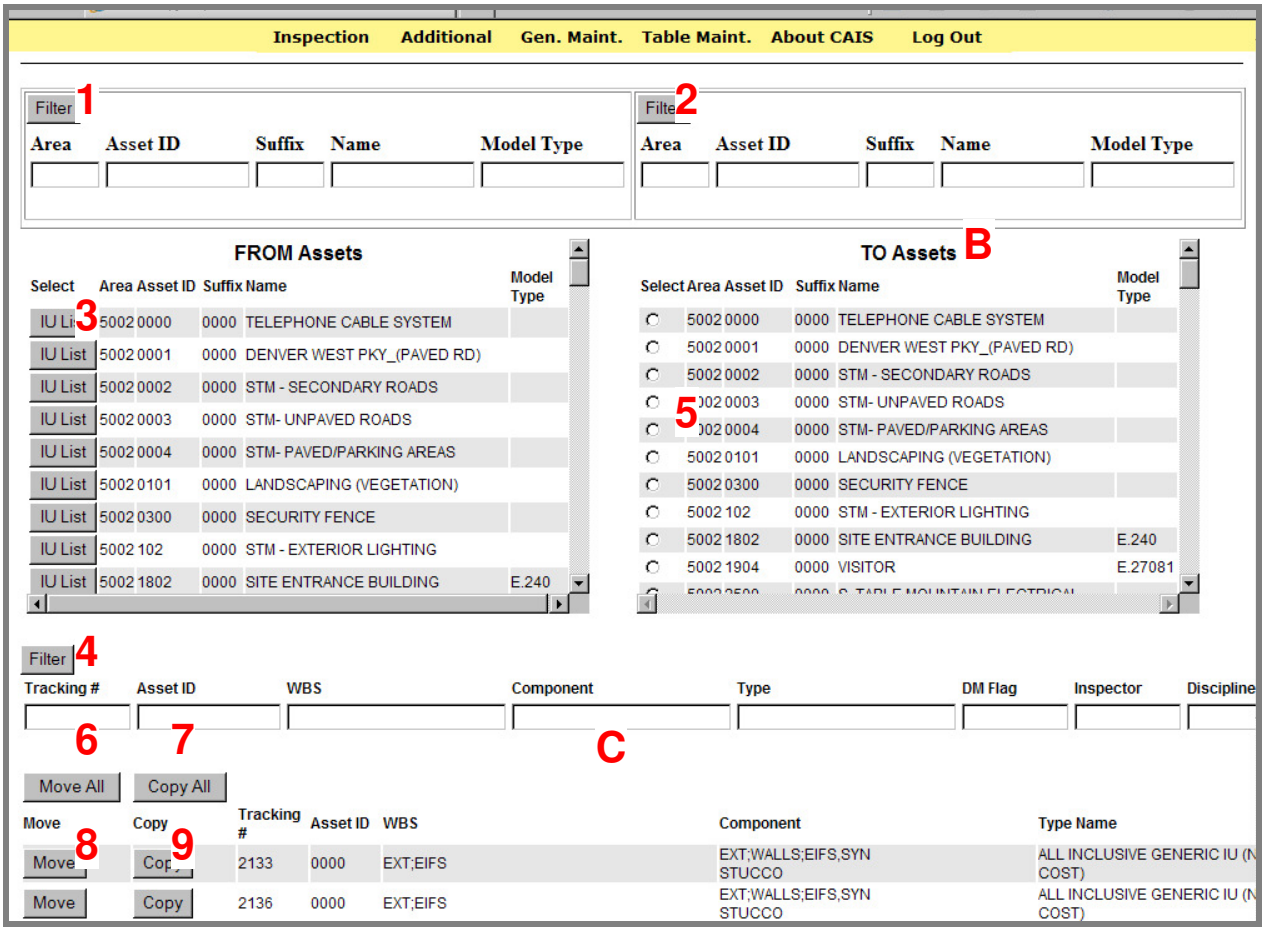


Figure 45 Move/Copy Inspection Units Screen

To move or copy an IU:

1. Filter the assets for the FROM assets in section A.
2. Filter the assets for the TO assets in section B.
3. Select the IU List button for the asset in the FROM assets, section A, you will be copying or moving.
4. The assets that are available to move or copy will appear in section C. You can filter this list by selecting the Filter button labeled with a 4. The asset's associated IUs appear in section C.
5. Select the radio button for the asset into which you are moving or copying IUs. You can move or copy individual IUs or all listed IUs.
6. To move or copy one IU, click on either the copy or move buttons (8 or 9), as appropriate.
7. To move or copy all IUs, click on the Move All or Copy All buttons (6 or 7), as appropriate.

2.6 Type Search

The Type Search window enables you to query the asset for data pertaining to a specific type. To perform a general search of RS Means line item data, start by selecting the Type Search option on the Inspection dropdown option on the Menu Bar (Figure 46). Note the material, equipment, overhead and total labor costs are displayed for each item.

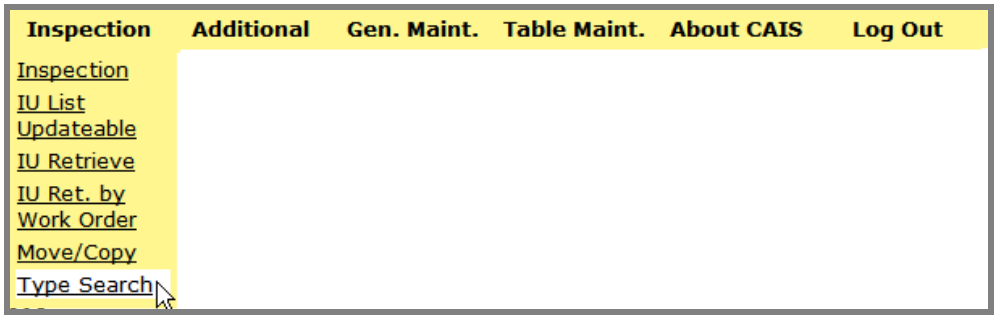


Figure 46 Type Search Selection

The Inspection Type Search screen will appear as shown in Figure 47.

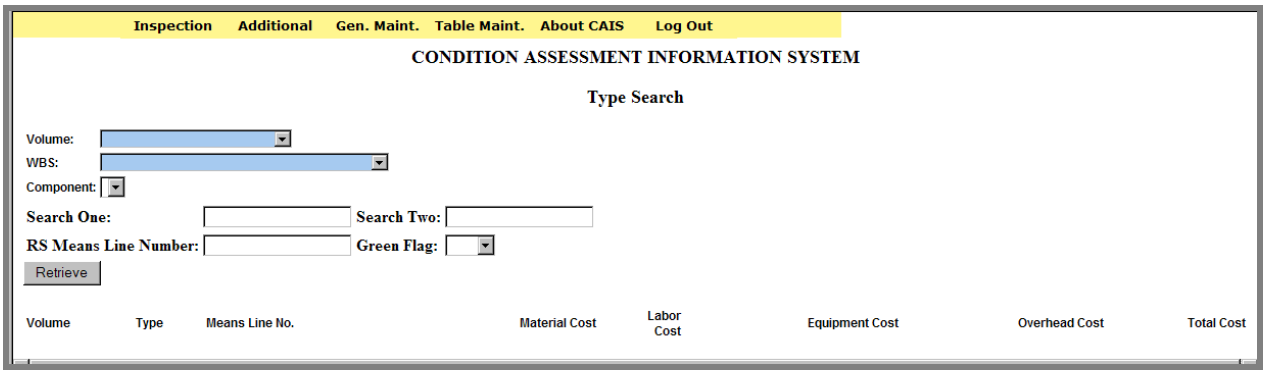


Figure 47 Inspection Type Search Screen

To perform the Type Search, select from the dropdown selections list the Volume, WBS, Component, and Green Flag. Click on the Retrieve button and the data appears in the lower third of the screen as shown in Figure 48. This is read-only information.

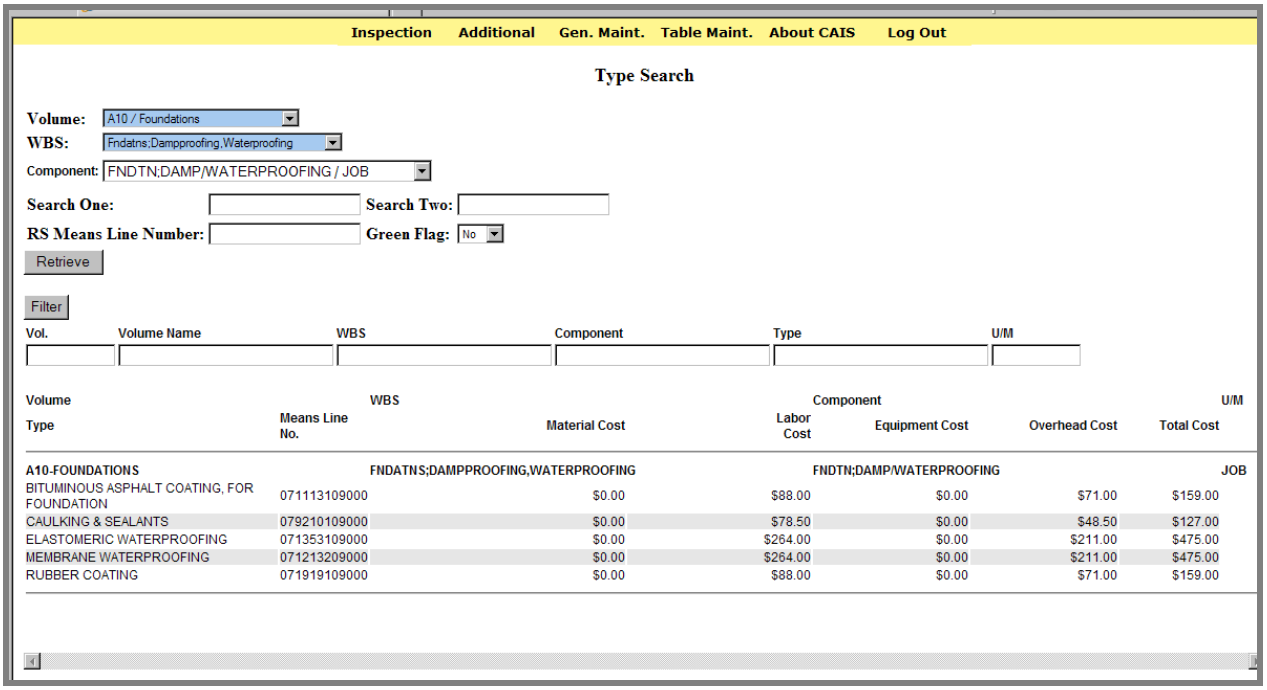


Figure 48 Inspection Type Search Screen after Data Retrieval

To import search results in the IU Detail window, you must access the Type Search through the Inspection – IU Detail Window. Click on the Type Search button in the IU Detail window to open the Inspection Type Search window. Select a Type and the data you selected will be transferred to the Volume, WBS, and Component and Type fields on the IU Detail screen.

3. Costing

This section describes how to perform the evaluation of survey/inspection deficiencies and how to develop repair/replacement costs from them.

3.1 CAIS Costing Overview

CAIS costing is based on RS Means Assembly and Facilities Construction Cost data. The costs are applied to the component type and quantity specified for the IU. Costs are broken down by equipment, material, labor, and overhead type. Costing multipliers based on geographical locations as well as site, area, asset, and IU costs can be applied to the RS Means cost. The Official Cost is computed from, in order of importance, the Estimated Cost, the Replacement Cost, and the Repair Cost fields.

- Estimated Cost is used if it is less than the inspector limit set by the system administrator. The default value is $5,000, but it can be changed by the site. Once the limit is surpassed, the estimated cost is no longer the official cost. The administrator can set or change the limit by going to Table Maintenance/Inspector Estimate List and adjust the cost limit.
- Replacement Cost is computed if there is a replacement quantity specified in the IU window. This cost equals the replacement quantity times the RS Means Unit cost of the IU.
- Repair Cost is based on the deficiencies selected and the severity coverage of the deficiencies. It is used as the official cost if there is no inspector-estimated cost within the user-defined limit and there is no specified replacement quantity. The cost is based on algorithms developed by Parson Brinckerhoff, the CAS/CAIS engineering advisor.

All of the above costs can be considered deferred maintenance costs or rehab and improvement costs (RIC). RIC allows IUs to be classified as modernization, ADA, or seismic upgrades costs, etc., instead of deferred maintenance.

When you recost an individual asset and when you recost the site, the same fields get updated. The difference is that all of the assets get recosted when you recost the site and only one asset gets updated when you recost an individual asset.

When an asset is recosted all of the inspection units get recosted. After they have been recosted the following fields in the cais_site_assets table get updated:

as_official_cost
as_def_maint_cost
as_modernize_cost

On the level of the cais_site_inpsected_ius table, when an IU is re-costed, the following fields get updated:

iiu_official_cost
base_cost
geog_adj_cost
site_adj_cost

def_maint_cost
modernize_cost
replace_cost
repair_cost

Figure 49 displays these various costing methods. The Deferred Maintenance Cost matches the Official Cost; but only those IUs that are flagged yes in the Deferred Maintenance box are included. When the Status Field on the IU window is set to Completed, the Costed IU/Deferred Maintenance flag is automatically set to No, and the Repair Cost is no longer considered as Deferred Maintenance.

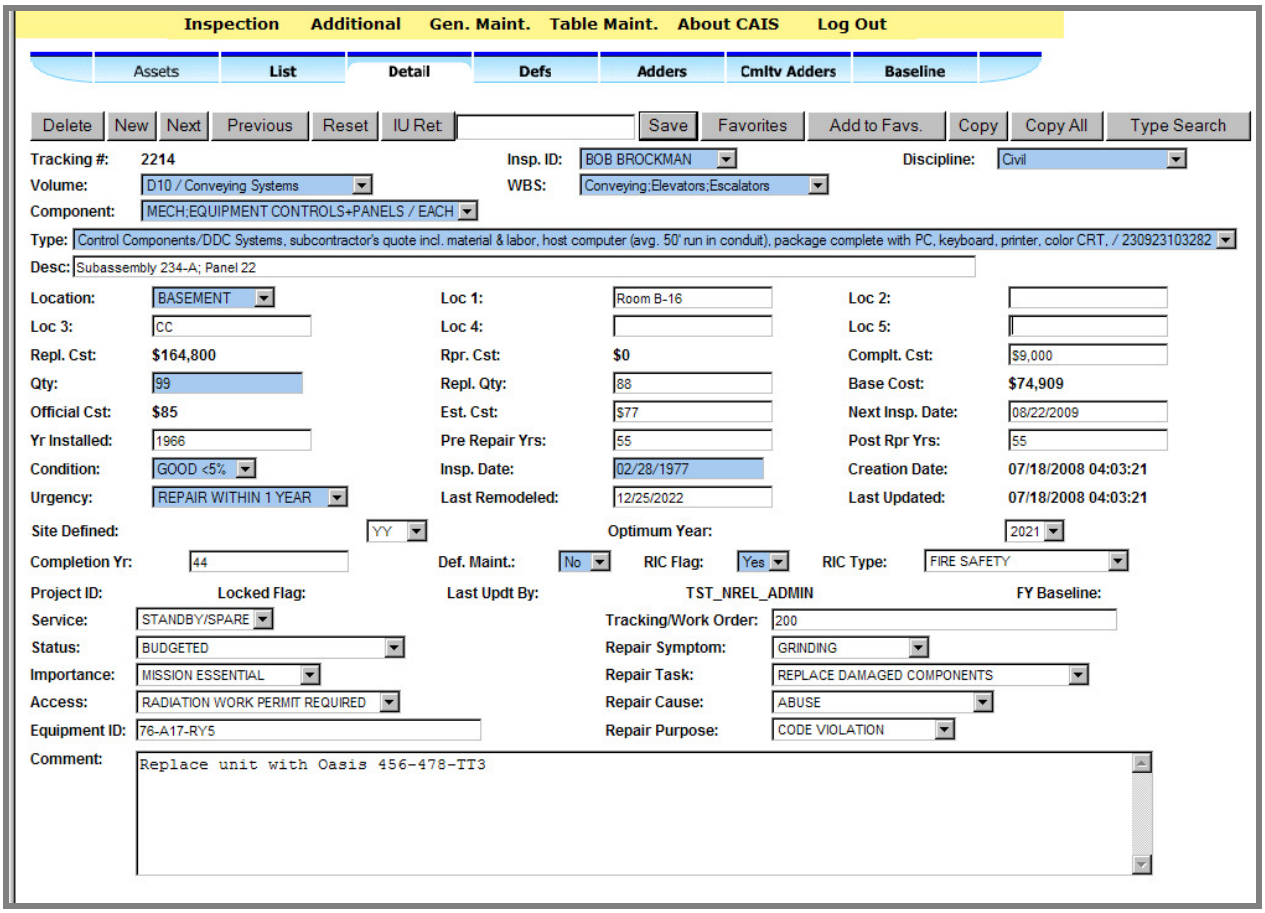


Figure 49 Inspection IU Detail Window

Cost data appears in Reports and on the Inspection Unit Detail, Asset Detail, and Summary Condition windows. Sites are required to report their annual deferred maintenance costs at the end of each fiscal year to OECM, MA-50, to satisfy a Government-wide reporting requirement.

3.2 Cost Adders

DOE sites have many unique, hazardous, and secure environments. These unusual conditions necessitate unique procedures and materials to protect personnel. These special conditions add

cost to the repair process and project development. The CAIS Cost Adders window enables the administrator to identify these conditions and detail these unique cost mark ups.

Before any costing can be accomplished, the site administrator should select Cost Adders from the Table Maintenance options, Figure 50, print the Table Maintenance Cost Adders List screen, and provide copies to the site cost estimators and project planners. The administrator will need their input on the actual costs multipliers used to estimate facility maintenance projects. The administrator should sit down with these individuals and get their data and insert the mark up details into this table. Using the site estimator's mark-ups will improve the accuracy of the CAIS estimates for deferred maintenance and rehab and improvement costs.

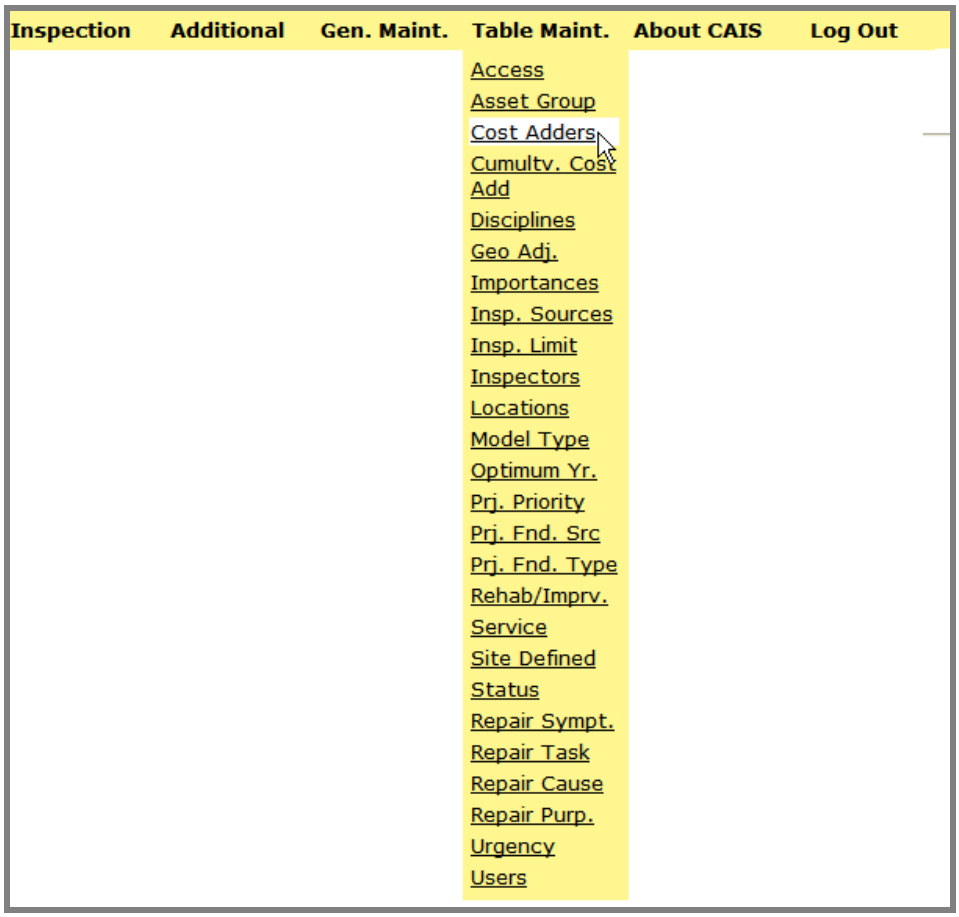


Figure 50 Table Maintenance Cost Adders Selection Window

The Table Maintenance Cost Adders List screen is shown in Figure 51.

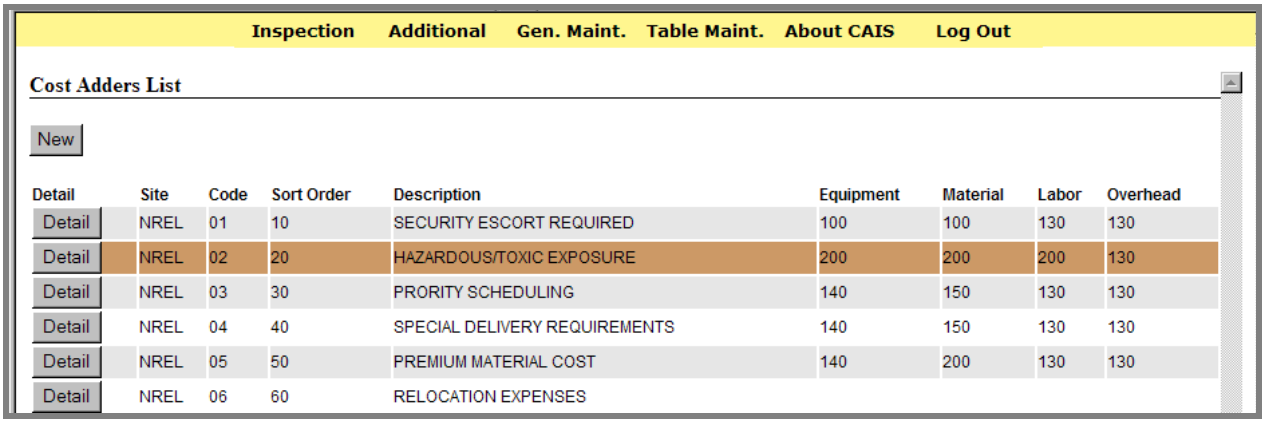


Figure 51 Table Maintenance Cost Adders List Screen

The Cost Adders List has eight columns. Each cost adder has four variables: Equipment, Material, Labor, and Overhead. Sites can change any of these variables to match their site cost conditions. Sites can also create new cost adders by clicking the "New" button and entering the appropriate information. The Cost Adders table comes preloaded with some generic cost adders that most sites use.

Click on the Detail button to open the Cost Adder Detail screen for an item as shown in Figure 52. The Code represents a short reference to the cost adder description. The Sort Order is the order the cost adder appears on the list.

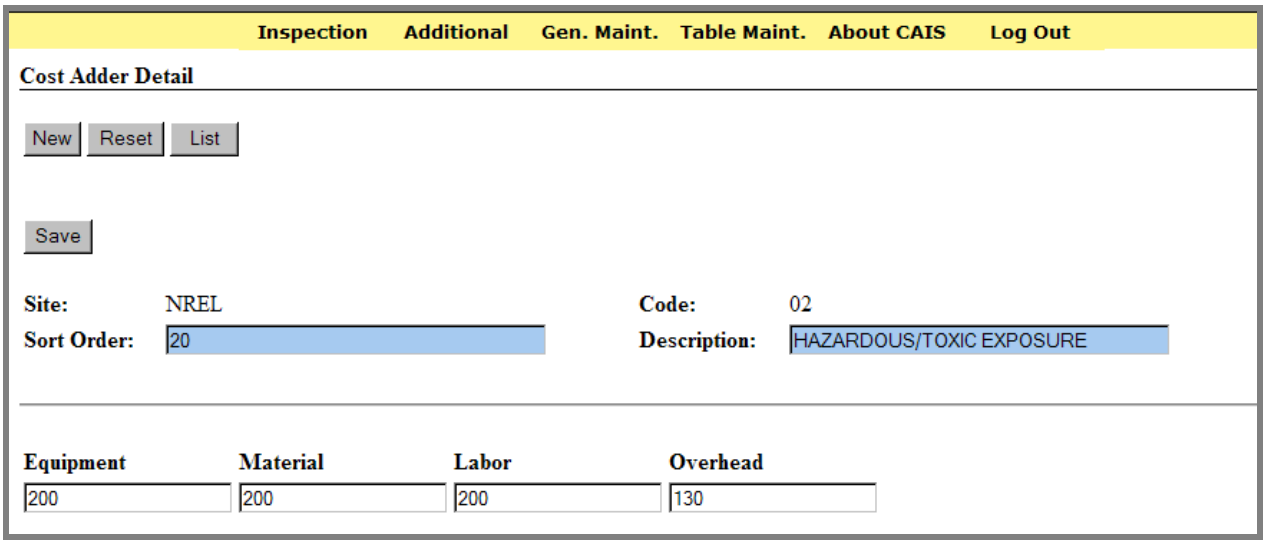


Figure 52 Table Maintenance Cost Adders Detail Screen

Costs shown are based on RS Means National Averages for materials and installation. CAIS automatically adjusts for the city or Zip Code location by applying a geographic or location adjuster.

CAIS also has a Cumulative Cost Adder table, Figure 53, where sites can create cost adders that are not a function of equipment, material, labor, and overhead. Examples are quality control testing, special inspections to meet safety codes requirements. Data entry is the same as the cost adders table. Figures 54 and 55 display how these costs can be customized.

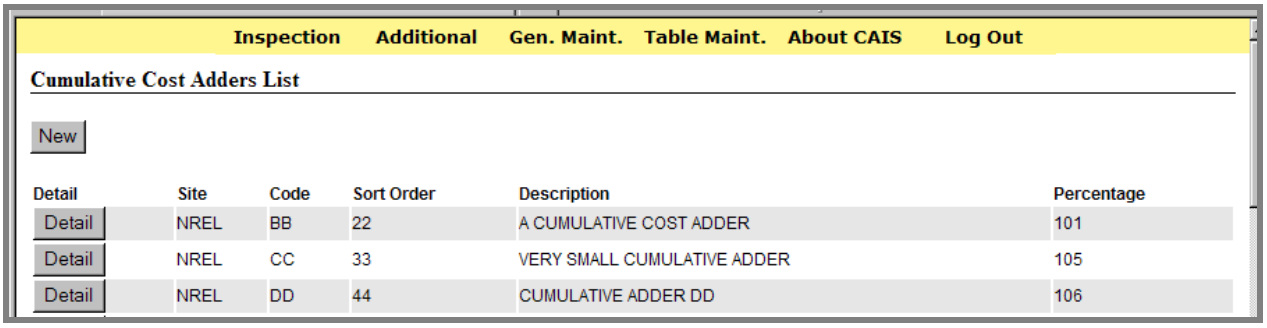


Figure 53 Table Maintenance Cumulative Cost Adder Window

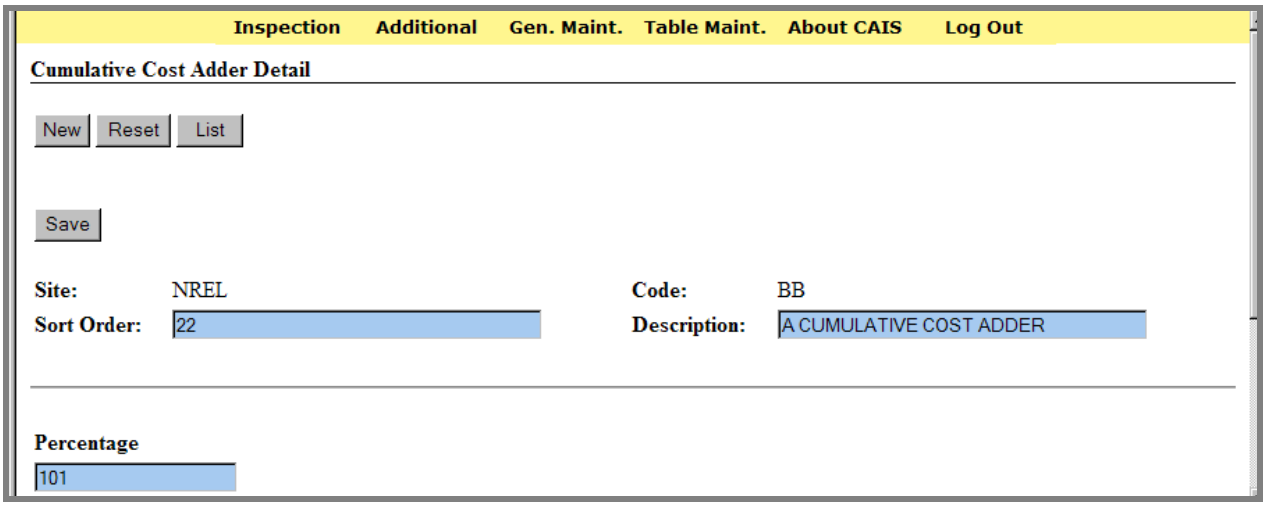


Figure 54 Table Maintenance Cumulative Cost Adder Detail Window

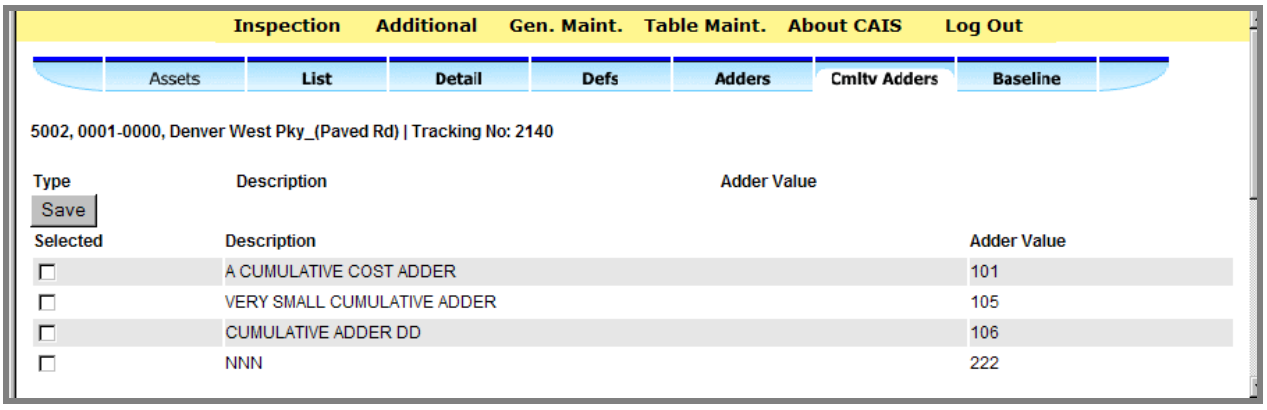


Figure 55 IU Cumulative Cost Adder Detail

4. Reports

All reports created by CAIS Web can be printed in HTML, Excel and PDF formats.

To restrict report dissemination, the "Official Use Only" flag can be set by going to the General Maintenance option on the Menu Bar, selecting Site Maintenance from the dropdown menu and then clicking on Detail. You can then select "Yes" in the dropdown menu for the Official Use Only Flag. This will cause "Official Use Only" to be displayed in the header and footer of any report that is run. When "Last Inspection Date" on the Site Maintenance Detail screen is set to "Yes" the Last Inspection Date Input on the IU Detail Screen will automatically update the Last Inspection Date for the Asset provided that the last inspection date for the IU is more recent than the last inspection date that is already stored for the asset. The last inspection date for the asset is particularly important since this field is part of the FIMS export/upload.

When you select a report, you will be asked to re-cost the site/area. Re-costing is necessary if you add or modify IU data. The default setting is No. Re-costing the site can be very time consuming. It should probably be done at the beginning or end of the day.

These subsections describe the standard reports available in CAIS Web.

The Additional Menu has five categories of reports:

1. **Site Level** – These reports summarize all asset deficiency cost information into one detailed report by site or area.
2. **Asset Level** - These reports contain assessment information for an individual asset.
3. **IU Level** – The data in these reports is IU information, which is very detailed data used by site maintenance staff and project planning/estimator.
4. **Summary Condition** – This report provides summary deferred maintenance costs and facility condition indexes of WBS systems. Used by planners and Headquarters to review the condition of very important/mission essential facilities. This provides a good comparison of assets that have the same mission and various ages.
5. **Projects –** These reports summarize project costs dealing with rehab and improvement costs.

4.1 Site Level Reports

Figure 56 shows the Additional dropdown menu options with the selection for Site Level Reports highlighted. Click on this option and the screen shown in Figure 57 will appear.

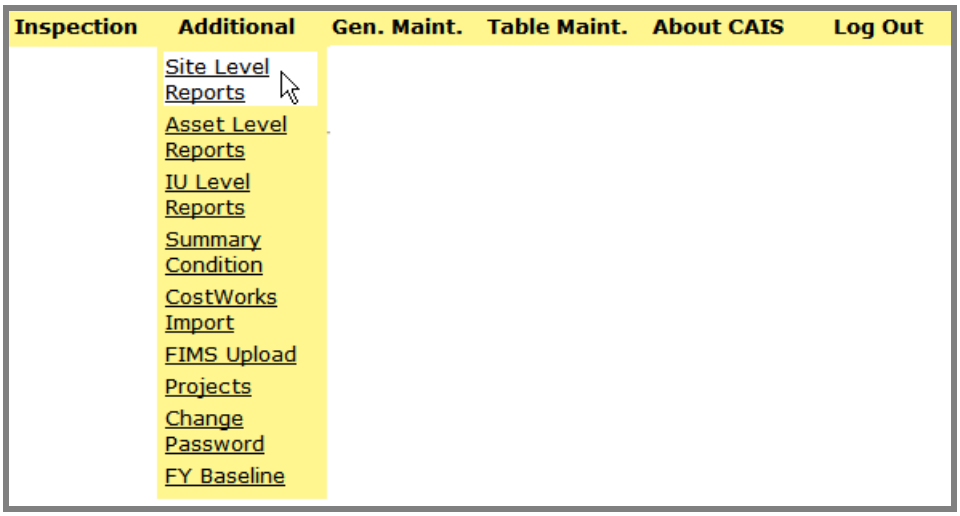


Figure 56 Additional Site Level Reports Selection Screen

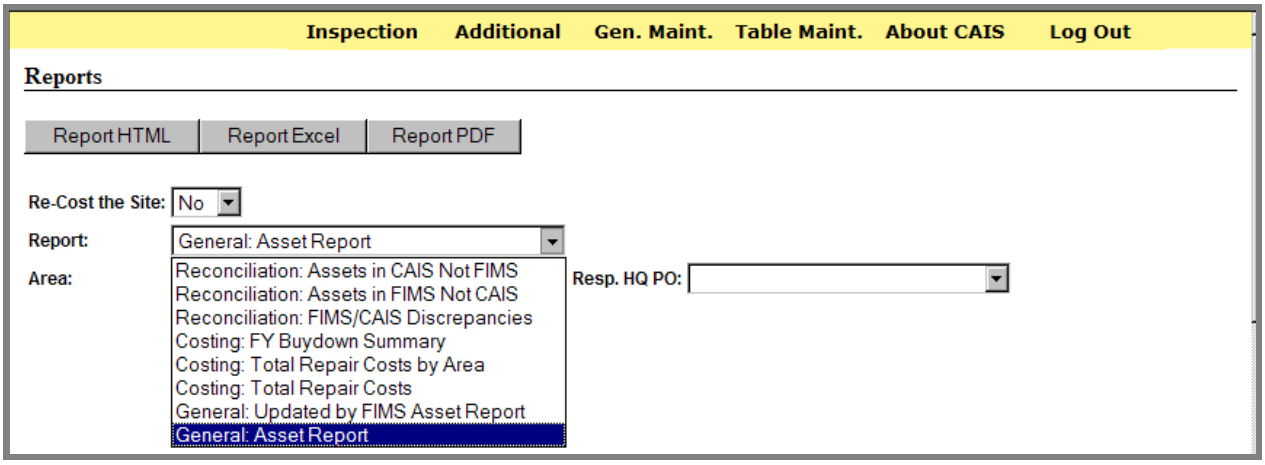


Figure 57 Site Level Reports List Selection Screen

Then select the report in the dropdown box. There are eight reports available: Assets in CAIS Not FIMS, Assets in FIMS Not CAIS, FIMS/CAIS Discrepancies, FY Buydown Summary, Total Repair Costs by Area, Total Repair Costs, Updated by FIMS Asset, and Asset. These reports list the Volume, CAS WBS, the Base Deficiency Cost and the Deferred Maintenance Cost.

The data for these reports can be filtered by Area and the Responsible HQ Program Office.

Note that the CAIS/FIMS Common Field Discrepancy report takes approximately 5 to 15 minutes to run.

The reports can be generated in HTML, Excel, or PDF format by clicking on the appropriate button.

Figures 58 through 65 are samples of these reports.

CONDITION ASSESSMENT INFORMATION SYSTEM

In CAIS and Not in FIMS Report

NREL

Area	FIMS Site	FIMS Area	Asset ID	Asset Suffix	Name	Model Type Code	RPV Value	Program Office
5002	05002	001	0003	0000	STM- UNPAVED ROADS		$5,994	EE
5002	05002	001	4317	0000	HISTORICAL BUNKER	N.010	$325,207	
5002	05002	001	4516	0000	TRANSFORMER		$0	EE
5002	05002	001	5703	0000	FTLB WEST PARKING LOT		$0	EE
5002	05002	001	5704	0000	FTLB EAST PKG LOT EXPANSION		$0	EE
5002	05002	001	5923	0000	FETA AMMO BUNKER	N.010	$304,144	
5002	05002	001	7117	0000	HIGH FLUX SOLAR FURNACE	E.250	$28,991	
5002	05002	001	7118	0000	HIGH FLUX SOLAR FURNACE	E.250	$20,438	
5002	05002	001	7205	0000	FETA SIDEWALKS		$0	EE
5002	05002	001	7315	0000	SOLAR RADIATION RESEARCH LAB	N.110	$248,357	EE
5002	05002	001	8129	0000	UTILITY SPINE		$0	EE
5002	05002	001	8400	0000	INFRASTRUCTURE DEVELOPMENT		$0	EE
5002	05002	001	8929	0000	PWR DISTRIBUTION		$321,075	EE
5002	05002	001	8939	0000	UNDERGROUND ELECTRICAL DISTRBUTION SYS.		$0	EE
5002	05002	001	9002	0000	WESTERN DRAIN DETENTION BASIN		$0	EE
5002	05002	001	9005	0000	EROSION CONTROL		$0	EE
5002	05002	001	ROBERT	0000	TELEPHONE CABLE SYSTEM		$0	EE
5002	05002	001	STM-1001	0000	STM SIDEWALKS INFRASTRUCTURE, CO510201		$0	EE
5002	05002	001	STM-1020	0000	STM PAVING RDS-'97 GPP TITLE 1/11 DESIGN		$0	EE
5003	05003	001	1.2	0000	NWTC DATA SHEDS	E.250	$11,108	
5003	05003	001	1.3	0000	NWTC DATA SHEDS	E.250	$11,108	
5003	05003	001	1.6	0000	NWTC DATA SHEDS	E.250	$11,108	
5003	05003	001	1.7	0000	NWTC DATA SHEDS		$0	
5003	05003	001	1.8	0000	NWTC DATA SHEDS	E.250	$11,108	
5003	05003	001	1.9	0000	NTWC DATA SHEDS	E.250	$11,108	
5003	05003	001	153	0000	PUMPHOUSE/STANDBYGENERATOR	E.250	$84,227	
5003	05003	001	248	0000	NWTC TRAILER	E.150	$205,651	
5003	05003	001	249	0000	NWTC TRAILER	E.150	$205,651	
5003	05003	001	251	0000	NWTC-ADMINISTRATION BUILDING	N.080	$7,830,722	EE
5003	05003	001	253	0000	NWTC BUILDING 253	E.250	$149,633	
5003	05003	001	257	0000	NWTC TRAILER	E.150	$205,651	
5003	05003	001	3.2	0000	NWTC DATA SHEDS	E.250	$20,882	
5003	05003	001	3.4	0000	NWTC DATA SHEDS	E.250	$20,882	
5003	05003	001	4.2	0000	NWTC DATA SHEDS	E.250	$11,108	
5003	05003	001	M1A	0000	NWTC BUILDING M1A	E.250	$11,108	
5003	05003	001	M1B	0000	NWTC BUILDING M1B	E.250	$5,554	
5003	05003	001	M1C	0000	NWTC BUILDING M1C	E.250	$11,108	
5003	05003	001	M2	0000	NWTC BUILDING M2	E.250	$11,108	
5003	05003	001	M3	0000	NWTC BUILDING M3	E.250	$22,215	

Count: 39

Figure 58 Assets in CAIS Not in FIMS

CONDITION ASSESSMENT INFORMATION SYSTEM

In FIMS and Not in CAIS Report

NREL

Area	Property ID	Name	Type	Owned Ingrant	PO	Usage Code	Design Code	Model Type	Sq. Ft	RPV Value	Yr. Built	Acq. Cost	Excess Ind.	Excess Yr.
001	4015	Science & Technology Facility	B	O	EE	793		N09	71,347	26,214,029	2006	21,396,572	N	
001	STM-1070	S&TF Water Line Extension	S	O	EE	8129			0	89,796		89,796	N	
001	2506	STM Site Electrical Monitoring	S	O	EE	8909			0	87,772		87,772	N	
001	0005	STM- Signage	S	O	EE	7007			0	69,143		69,143	N	
001	STM-1060	STM Water Conservation Project	S	O	EE	2009			0	45,999		45,999	N	
001	7282	SERF 15KV Utility Upgrade -	S	O	EE	8909			0	33,190		33,190	N	
001	7283	SERF Nitrogen Supply Lines - Phase 1	S	O	EE	8359			0	231,362		213,362	N	
001	STM-1080	STM DDC Controls Upgrade	S	O	EE	7509			0	801,900		693,000	N	
001	1005-01	DER Gas Line Extension	S	O	EE	8329			0	56,415		56,415	N	
001	NWTC-1011-01	NWTC H2 Test Pads	S	O	EE	3009			0	314,117		314,117	N	

Figure 59 FY Assets in FIMS Not in CAIS

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CONDITION ASSESSMENT INFORMATION SYSTEM

FIMS/CAIS Discrepancies Report

NREL

Mismatch	Area	Property ID	Type	Name	FIMS PO	CAIS PO	FIMS Usage	CAIS Usage	FIMS Haz. Code	CAIS Haz. Code	FIMS Model	CAIS Model	FIMS Sq Ft	CAIS Sq Ft	FIMS RPV	CAIS RPV	FIMS Yr Built	CAIS Yr Built	FIMS Acq. Cost	CAIS Acq. Cost	FIMS Excess Ind.	CAIS Excess Ind.	FIMS Excess Yr.	CAIS Excess Yr.	FIMS Status	CAIS Status	FIMS Mission	CAIS Mission
02-Use Code	001	2501	S	Storm Water Drainage System	EE	EE	2809	8629	10	10			0	0	330,692	330,692			25,690	1N	N				1		3	
02-Use Code	001	255	S	Dynamometer Spin Test Facility Enclosure	EE		3009	721	10			N07	0	2,452	2,233,717	529,102			2,233,717	0N					1		1	
02-Use Code	001	STM-1021	S	S. Table Mountain Security Gate	EE	EE	2429	8131	10	10			0	0	41,091	0			41,075	41,075N	N				1		1	
03-Haz Code	001	1904	B	Visitor's Center	EE	EE	292	292	10	01	E27	E03	6,459	6,459	1,326,421,271	321994	1994		1,063,691,063,690	1,063,690N	N				1		2	3
03-Haz Code	001	255	S	Dynamometer Spin Test Facility Enclosure	EE		3009	721	10			N07	0	2,452	2,233,717	529,102			2,233,717	0N					1		1	
03-Haz Code	001	NWTC-101	B	NWTC Site Entrance Building	EE	EE	296	296	10		E24	E24	160	160	125,000	170,000	2002	2003	125,000	170,000N					1	1	1	
04-Model	001	1904	B	Visitor's Center	EE	EE	292	292	10	01	E27	E03	6,459	6,459	1,326,421,271	321994	1994		1,063,691,063,690	1,063,690N	N				1		2	3
04-Model	001	4703	B	Stone Face Bunker - FETA	EE	EE	732	732	10	10	N01	N02	417	417	241,999	205,009	1940	1940	0	0N	N				1		3	
04-Model	001	7421	B	Solar Industrial Mesa Test Area	EE	EE	400	400	10	10	N11	E25	1,220	1,220	188,484	99,611	1992	1992	184,318	184,318N	N				1		1	
05-SqFt	001	1.1	B	NWTC Data Sheds	EE	EE	801	801	10	10	E25	E25	1,848	100	112,350	8,165	1981	1981	101,570	0N	N				1		2	
05-SqFt	001	251	B	NWTC-	EE	EE	101	101	10	10	N08	N08	22,026	22,093	7,482,547	582,541	1982	1982	2,132,922,132,920		N				1		1	

Figure 60 FIMS/CAIS Discrepancies

CONDITION ASSESSMENT INFORMATION SYSTEM

FY Buydown Summary Report

NREL

Baseline Date	Program Office	Buydown	Deferred Maintenance
Current	Energy Efficiency/Renew Energy	2,724	24,670,164
Program Office Totals:		**$2,724**	**$24,670,164**
Current	Not Specified	0	843,083
GRAND TOTALS:		**$2,724**	**$25,513,247**

Figure 61 FY Buydown Summary

CONDITION ASSESSMENT INFORMATION SYSTEM

Total Repair Costs by Area Report

Area: 5002 - SOUTH TABLE MOUNTAIN

Program Office: EE

Volume	CAS WBS	Base Cost	DM Cost
A10	Foundations	$388	$614
A20	Basement Construction	$1,190	$1,565
B10	Superstructure	$0	$0
B20	Exterior Closure	$16,453	$25,112
B30	Roofing	$63,360	$117,629
C10	Interior Construction	$0	$0
C20	Interior Stairs	$0	$0
C30	Interior Finishes	$13,872	$18,147
D10	Conveying Systems	$544,504	$287,228
D20	Mechanical - Plumbing	$330,311	$66,925
D30	Mechanical - HVAC	$563,630	$804,657
D40	Mechanical - Fire Protection	$36,250	$116,299
D50	Electrical Systems	$977,009	$543,275
E10	Equipment	$0	$0
E20	Furnishings	$0	$0
F10	Specialty Systems	$0	$0
F20	Selective Building Demo	$0	$0
G10	Sitework Preparation	$3,979	$1,601
G20	Sitework Improvements	$2,342,184	$452,417
G30	Sitework Mechanical Util.	$200,296	$0
G40	Sitework Electrical Util.	$0	$0
G90	Sitework Other	$714,117	$0
Area Totals:		$5,807,543	**$2,435,469**
Grand Totals:		**$5,807,543**	**$2,435,469**

Figure 62 Total Repair Cost Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Total Repair Costs Report

Area: 5002

Program Office: EE

Volume	CAS WBS	Base Cost	DM Cost
A10	Foundations	$388	$614
A20	Basement Construction	$1,190	$1,565
B10	Superstructure	$0	$0
B20	Exterior Closure	$16,453	$25,112
B30	Roofing	$63,360	$117,629
C10	Interior Construction	$0	$0
C20	Interior Stairs	$0	$0
C30	Interior Finishes	$13,872	$18,147
D10	Conveying Systems	$544,504	$287,228
D20	Mechanical - Plumbing	$330,311	$66,925
D30	Mechanical - HVAC	$563,630	$804,657
D40	Mechanical - Fire Protection	$36,250	$116,299
D50	Electrical Systems	$977,009	$543,275
E10	Equipment	$0	$0
E20	Furnishings	$0	$0
F10	Specialty Systems	$0	$0
F20	Selective Building Demo	$0	$0
G10	Sitework Preparation	$3,979	$1,601
G20	Sitework Improvements	$2,342,184	$452,417
G30	Sitework Mechanical Util.	$200,296	$0
G40	Sitework Electrical Util.	$0	$0
G90	Sitework Other	$714,117	$0
		$5,807,543	**$2,435,469**

Figure 63 Typical Total Repair Cost by Area Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Asset List Updated by FIMS Report

NREL

Site Abbr	Area	Asset ID	Suffix	Name	Model Type	Annual Insp. Date	Last Insp. Date	RPVProg. Office Prop. Type	Mission Dep. Prog.	Mission Dependency	Asset Group	Archived in FIMS	Added by FIMS	Updated by FIMS
NREL	5002	8606	0000	ALTERNATIVE FUELS USER FACILITY	N09 LABS - BIOLOGY/ENV (80/20)		08/20/2003	11,794,487EE	B	Mission Critical (FRPC)				02/25/2009
NREL	5002	7119	0000	CONCENTRATED SOLAR FLUX FACILITY	N11 LABS - PHYSICS/COMPUTER(80/20)		08/20/2003	268,214EE	B	Mission Critical (FRPC)				02/25/2009
NREL	5002	4515	0000	SOLAR ENERGY RESEARCH FACILITY	N09 LABS - BIOLOGY/ENV (80/20)		08/18/2003	42,580,208EE	B	Mission Critical (FRPC)				02/25/2009
NREL	5002	8206	0000	THERMAL TEST FACILITY	N09 LABS - BIOLOGY/ENV (80/20)		08/18/2003	3,846,866EE	B	Mission Critical (FRPC)				02/25/2009
NREL	5003	1.1	0000	NWTC DATA SHEDS	E25 WAREHOUSE/STORAGE-PRE-ENGRNED		08/20/2						09/02/2008	
NREL	5002	0101	0000	LANDSCAPING (VEGETATION)									09/01/2008	
NREL	5002	000JJ	0000	JJNN	E16 OFFICE - MEDIUM		12/07/2004	999				08/26/2008		
NREL	5002	0003	0000	STM- UNPAVED ROADS			12/07/2004	6,452EE				08/25/2008		
NREL	5002	0002	0000	STM - SECONDARY ROADS			07/18/2008	1,017,572EE	S	Mission Dependent, Not Critical (FRPC)				08/24/2008
NREL	5002	0001	0000	DENVER WEST PKY_(PAVED RD)		01/01/2008	01/01/2008	1,538,440EE	S	Mission Dependent, Not Critical (FRPC)			08/23/2008	
NREL	5002	0000	0000	TELEPHONE CABLE SYSTEM	E06 CLASSROOM - MEDIUM	01/01/2008	07/18/2008	90,000,000EE	S	Mission Critical (FRPC)		08/22/2008		
NREL	5003	1.2	0000	NWTC DATA SHEDS	E25 WAREHOUSE/STORAGE-PRE-ENGRNED		08/20/2003	8,165				08/22/2008		
NREL	5002	0300	0000	SECURITY FENCE			02/28/1977	0EE	S	Mission Dependent, Not Critical (FRPC)	D			06/03/2007
NREL	5003	1.3	0000	NWTC DATA SHEDS	E25 WAREHOUSE/STORAGE-PRE-ENGRNED		08/20/2003	8,165					07/07/2002	07/08/2003

Count: 14

Note that actions are listed in chronological order, with the most recent action at the top of the list.

Figure 64 Typical Updated by FIMS Asset Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Asset List Report

NREL

Site Abbr	Area	Asset ID	Suffix	Name	Model Type	Annual Insp. Date	Last Insp. Date	RPVProg. Office Prop. Type	Mission Dep. Prog.	Mission Dependency	Asset Group	Archived in FIMS	Added by FIMS	Updated by FIMS
NREL	5009	1.1	0000	NWTC DATA SHEDS	E25 WAREHOUSE/STORAGE-PRE-ENGRNED		08/20/2003	8,165EE	B	Mission Dependent, Not Critical (FRPC)			09/02/2008	
NREL	5009	1000	0000	NWTC SIDEWALKS			02/20/2008	7,498EE	S	Not Mission Dependent (FRPC)				
NREL	5009	1001	0000	NWTC - SEWER PIPE				35,617EE	S	Mission Critical (FRPC)				
NREL	5009	1002	0000	NWTC - FIRE WATER PIPE				620,624EE	S	Mission Critical (FRPC)				
NREL	5009	1003	0000	NWTC - POWER DISTRIBUTION				1,132,259EE	S	Mission Critical (FRPC)				
NREL	5009	1004	0000	NWTC-EXTERIOR LIGHTING				95,829EE	S	Not Mission Dependent (FRPC)				
NREL	5009	1005	0000	NWTC NATURAL GAS DISTRIBUTION				0EE	S	Mission Dependent, Not Critical (FRPC)				
NREL	5009	251	0000	NWTC-ADMINISTRATION BUILDING	N08 LABS - HARD ENGINEERED (80/20)		08/19/2003	7,582,541EE	B	Mission Critical (FRPC)				
NREL	5009	251-02	0000	TURBINE FOUNDATIONS				0EE	S	Mission Critical (FRPC)				
NREL	5009	251-03	0000	ELECTRICAL WORK				0EE	S	Mission Critical (FRPC)				
NREL	5009	252	0000	NWTC-BLADE TEST FACILITY	N08 LABS - HARD ENGINEERED (80/20)		08/20/2003	870,687EE	B	Mission Critical (FRPC)				
NREL	5009	254	0000	INDUSTRIAL USER	N08 LABS - HARD ENGINEERED (80/20)		08/19/2003	3,986,544EE	B	Mission Critical (FRPC)				

Figure 65 Typical Asset Report

4.2 Asset Level Reports

Figure 66 depicts the Inspection Asset Level Reports selection on the Additional drop-down menu.

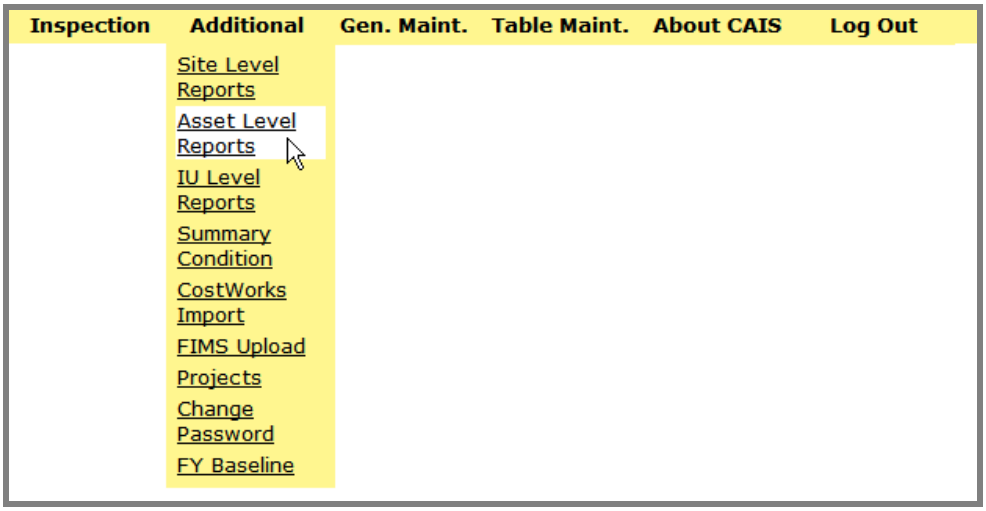


Figure 66 Inspection Asset Level Report Selection Menu

There are four asset level reports available for review as shown in Figure 67: They are the Deferred Maintenance, Summary Condition Compilation, Site Asset Costs by WBS, and Site Asset Costs.

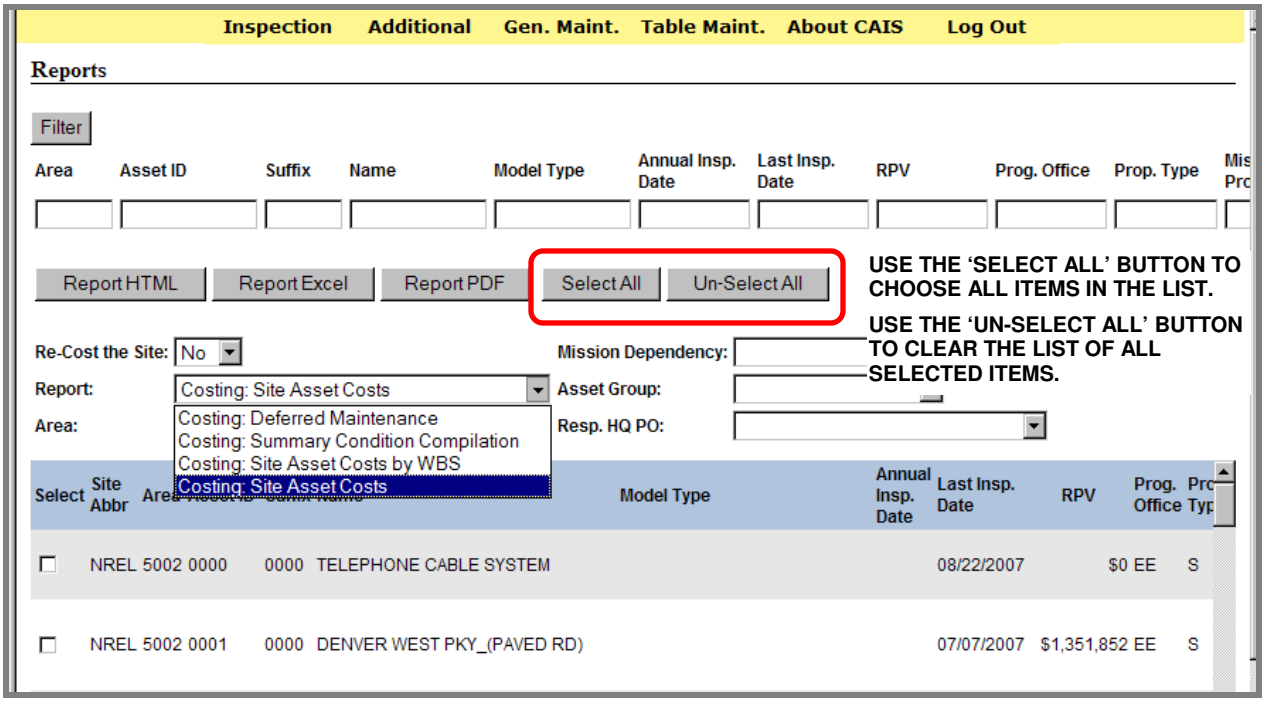


Figure 67 Asset Level Report Selection Screen

These reports offer options to find the asset you are looking for. The Filter tool can be used to locate your asset by Area, Asset ID, Suffix, Name, Model Type, Annual Inspection Date, Last Inspection Date, Replacement Plant Value (RPV), the Program Office responsible for the asset, Property Type, Mission Dependent Program, and Mission Dependency and Asset Group. The Mission Dependency comes directly from FIMS. To run the report for a specific mission dependency such as mission critical, use the drop down. This will be faster and more efficient than filtering by mission dependency.

Once located, select your report, the Area where the asset is located and the Responsible HQ PO. Click the format of the report and the report will appear. This report can be printed with good results if you print it landscape on 11" x 17" paper. Because of the size of the report, it is easier to work with it if you save it to an Excel format.

Figure 68 shows a sample Deferred Maintenance Report.

CONDITION ASSESSMENT INFORMATION SYSTEM

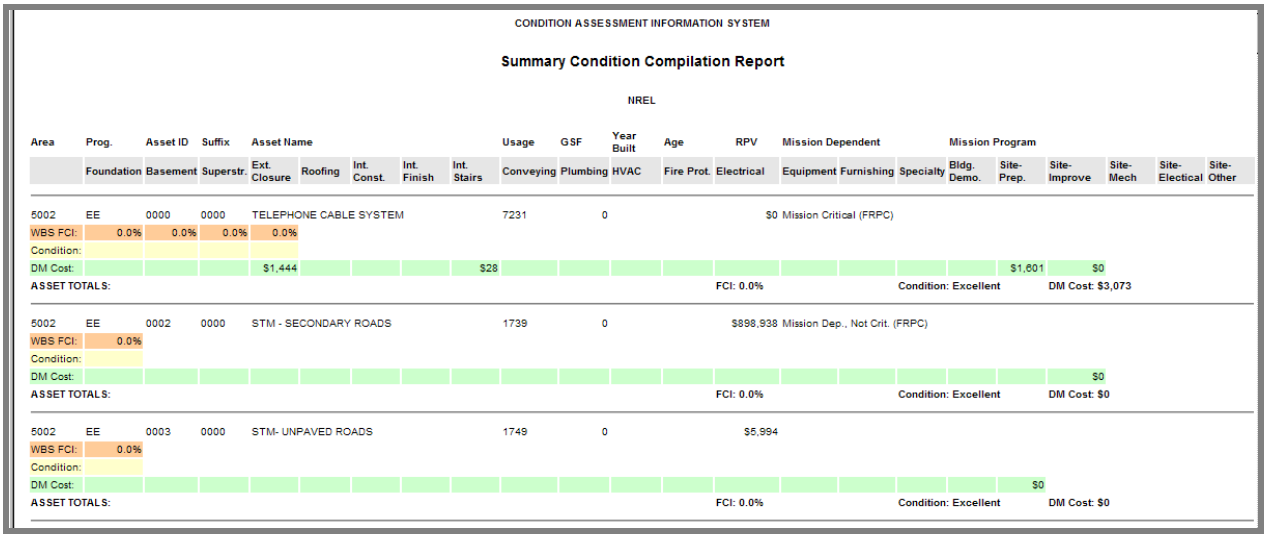
Deferred Maintenance Report

NREL

Site	Area	Prog. Office	Asset ID	Suffix	Asset Name	Asset Group	A10	A20	B10	B20	B30	C10	C20
NREL	5002	EE	0000	0000	TELEPHONE CABLE SYSTEM		0	0	0	1,444	0	0	0
NREL	5002	EE	0002	0000	STM - SECONDARY ROADS		0	0	0	0	0	0	0
NREL	5002	EE	0003	0000	STM- UNPAVED ROADS		0	0	0	0	0	0	0
NREL	5002	EE	0004	0000	STM- PAVED/PARKING AREAS		0	0	0	0	0	0	0
NREL	5002	EE	0300	0000	SECURITY FENCE		0	0	0	0	0	0	0
NREL	5002	EE	102	0000	STM - EXTERIOR LIGHTING		0	0	0	0	0	0	0
NREL	5002	EE	1802	0000	SITE ENTRANCE BUILDING		0	0	0	0	0	0	0
NREL	5002	EE	1904	0000	VISITOR		0	0	0	0	4,743	0	0
NREL	5002	EE	2501	0000	STORM WATER DRAIN SYSTEM		0	0	0	0	0	0	0
NREL	5002	EE	2502	0000	STM- SEWER PIPE		0	0	0	0	0	0	0
NREL	5002	EE	2503	0000	STM - DOMESTIC WATER PIPE		0	0	0	0	0	0	0
NREL	5002	EE	2505	0000	STM - FIRE WATER PIPE		0	0	0	0	0	0	0
NREL	5002		4317	0000	HISTORICAL BUNKER		0	0	0	0	0	0	0
NREL	5002	EE	4515	0000	SOLAR ENERGY RESEARCH FACILITY		0	0	0	0	0	0	0
NREL	5002	EE	4516	0000	TRANSFORMER		0	0	0	0	0	0	0
NREL	5002	EE	4703	0000	STONE FACE BUNKER - FETA		0	0	0	0	0	0	0
NREL	5002	EE	4716	0000	WASTE HANDLING FACILITY		0	0	0	0	0	0	0
NREL	5002	EE	5308	0000	FIELD TEST LAB BUILDING		614	1,565	0	14,606	110,679	0	0
NREL	5002	EE	5510	0000	FTLB FIRE LANE		0	0	0	0	0	0	0

Figure 68 Deferred Maintenance Report

Figure 69 shows a sample Summary Condition Compilation Report.



CONDITION ASSESSMENT INFORMATION SYSTEM

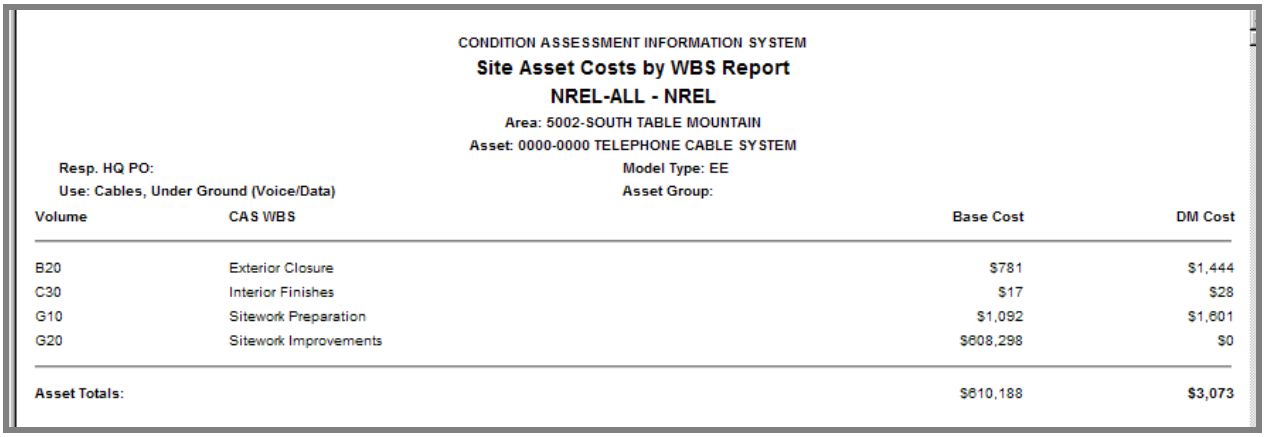
Summary Condition Compilation Report

NREL

Area	Prog.	Asset ID	Suffix	Asset Name	Usage	GSF	Year Built	Age	RPV	Mission Dependent	Mission Program
	Foundation	Basement	Superstr.	Ext. Closure	Roofing	Int. Const.	Int. Finish	Int. Stairs	Conveying	Plumbing	HVAC	Fire Prot.	Electrical	Equipment	Furnishing	Specialty	Bldg. Demo.	Site-Prep.	Site-Improve	Site-Mech	Site-Electical	Site-Other
5002	EE	0000	0000	TELEPHONE CABLE SYSTEM	7231		0		$0	Mission Critical (FRPC)												
WBS FCI:	0.0%	0.0%	0.0%	0.0%																		
Condition:																						
DM Cost:				$1,444				$28										$1,601	$0			
ASSET TOTALS:													FCI: 0.0%				Condition: Excellent		DM Cost: $3,073			
5002	EE	0002	0000	STM - SECONDARY ROADS	1739		0		$898,938	Mission Dep., Not Crit. (FRPC)												
WBS FCI:	0.0%																					
Condition:																						
DM Cost:																			$0			
ASSET TOTALS:													FCI: 0.0%				Condition: Excellent		DM Cost: $0			
5002	EE	0003	0000	STM- UNPAVED ROADS	1749		0		$5,994													
WBS FCI:	0.0%																					
Condition:																						
DM Cost:																		$0				
ASSET TOTALS:													FCI: 0.0%				Condition: Excellent		DM Cost: $0			

Figure 69 Summary Condition Compilation Report

Figure 70 shows a sample Site Asset Costs by WBS Report.



CONDITION ASSESSMENT INFORMATION SYSTEM

Site Asset Costs by WBS Report

NREL-ALL - NREL

Area: 5002-SOUTH TABLE MOUNTAIN

Asset: 0000-0000 TELEPHONE CABLE SYSTEM

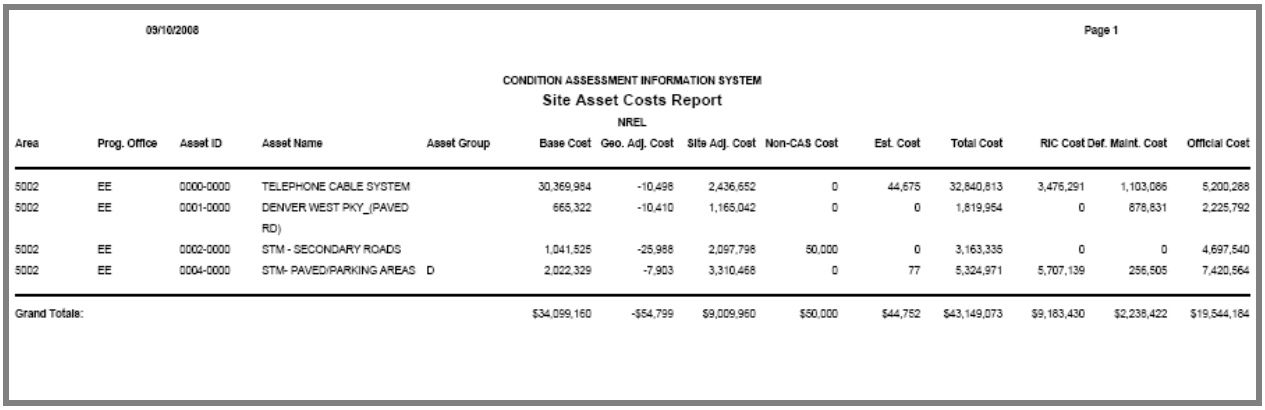
Resp. HQ PO: Model Type: EE

Use: Cables, Under Ground (Voice/Data) Asset Group:

Volume	CAS WBS	Base Cost	DM Cost
B20	Exterior Closure	$781	$1,444
C30	Interior Finishes	$17	$28
G10	Sitework Preparation	$1,092	$1,601
G20	Sitework Improvements	$608,298	$0
Asset Totals:		$610,188	**$3,073**

Figure 70 Site Asset Costs by WBS Report

Figure 71 shows a sample Site Asset Costs Report.



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CONDITION ASSESSMENT INFORMATION SYSTEM

Site Asset Costs Report

NREL

Area	Prog. Office	Asset ID	Asset Name	Asset Group	Base Cost	Geo. Adj. Cost	Site Adj. Cost	Non-CAS Cost	Est. Cost	Total Cost	RIC Cost	Def. Maint. Cost	Official Cost
5002	EE	0000-0000	TELEPHONE CABLE SYSTEM		30,369,984	-10,498	2,436,652	0	44,675	32,840,813	3,476,291	1,103,086	5,200,288
5002	EE	0001-0000	DENVER WEST PKY_(PAVED RD)		665,322	-10,410	1,165,042	0	0	1,819,954	0	878,831	2,225,792
5002	EE	0002-0000	STM - SECONDARY ROADS		1,041,525	-25,988	2,097,796	50,000	0	3,163,335	0	0	4,697,540
5002	EE	0004-0000	STM- PAVED/PARKING AREAS	D	2,022,329	-7,903	3,310,468	0	77	5,324,971	5,707,139	256,505	7,420,564
Grand Totals:					$34,099,160	-$54,799	$9,009,960	$50,000	$44,752	$43,149,073	$9,183,430	$2,238,422	$19,544,184

Figure 71 Site Asset Costs Report

4.3 IU Level Reports

Figure 72 depicts the IU Level Reports selection on the Additional drop-down menu.

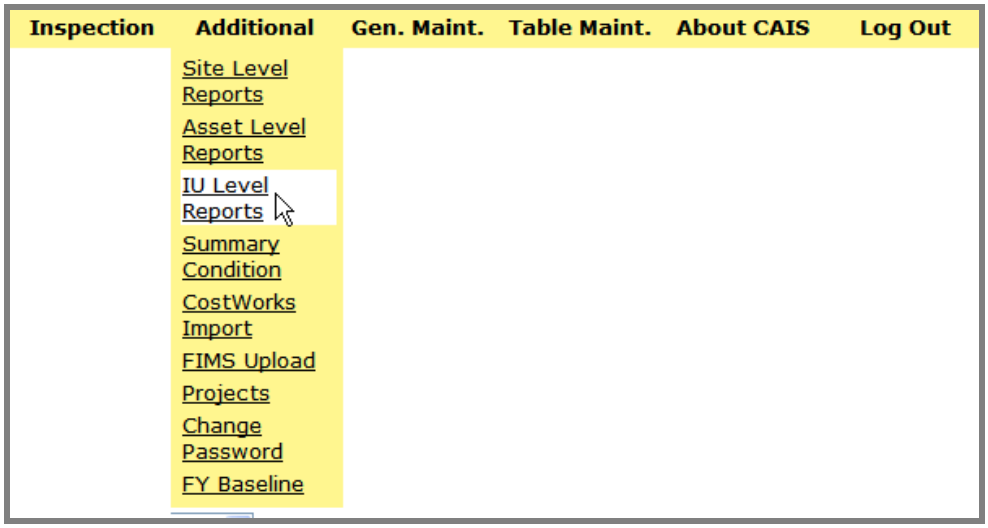


Figure 72 IU Level Report Selection Menu

There are seven IU Level reports available for review as shown in Figure 73. They are FY Buydown, FY Buydown by Date Input, Repair Costs, Abbreviated Survey Detail, Complete Survey Detail, Inspection Unit (Complete) and Inspection Unit (Abbreviated) reports.

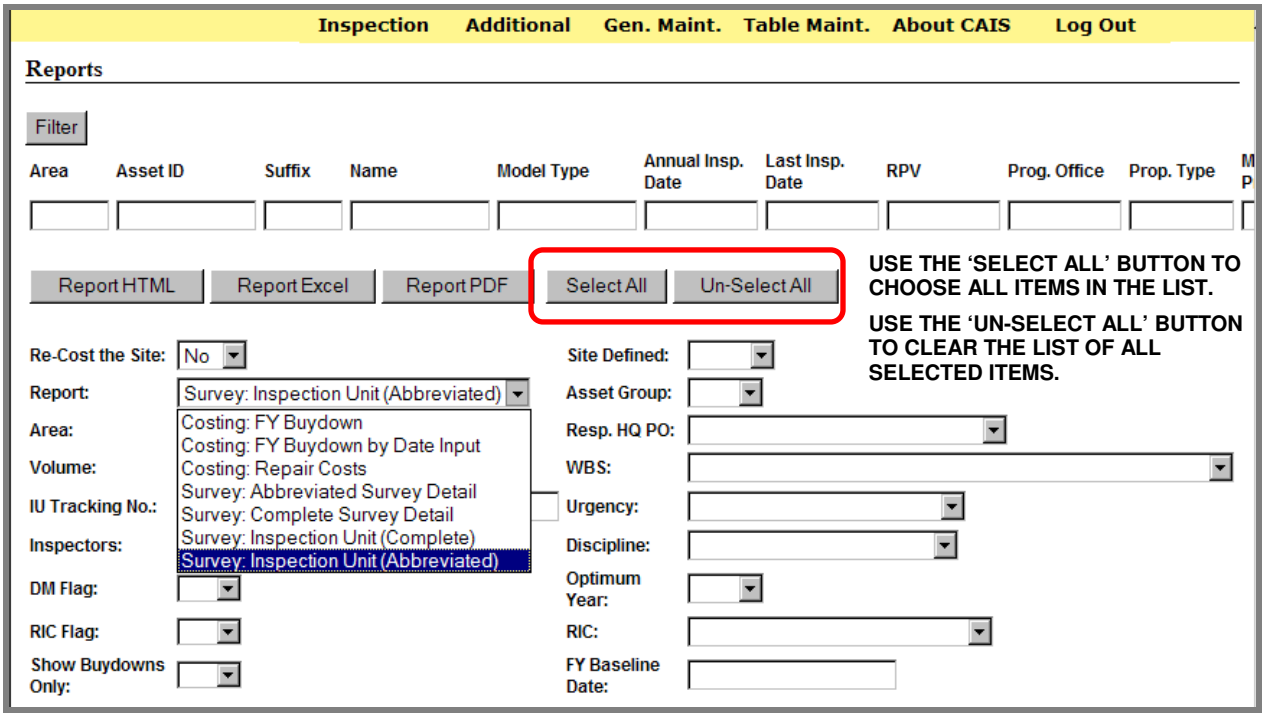
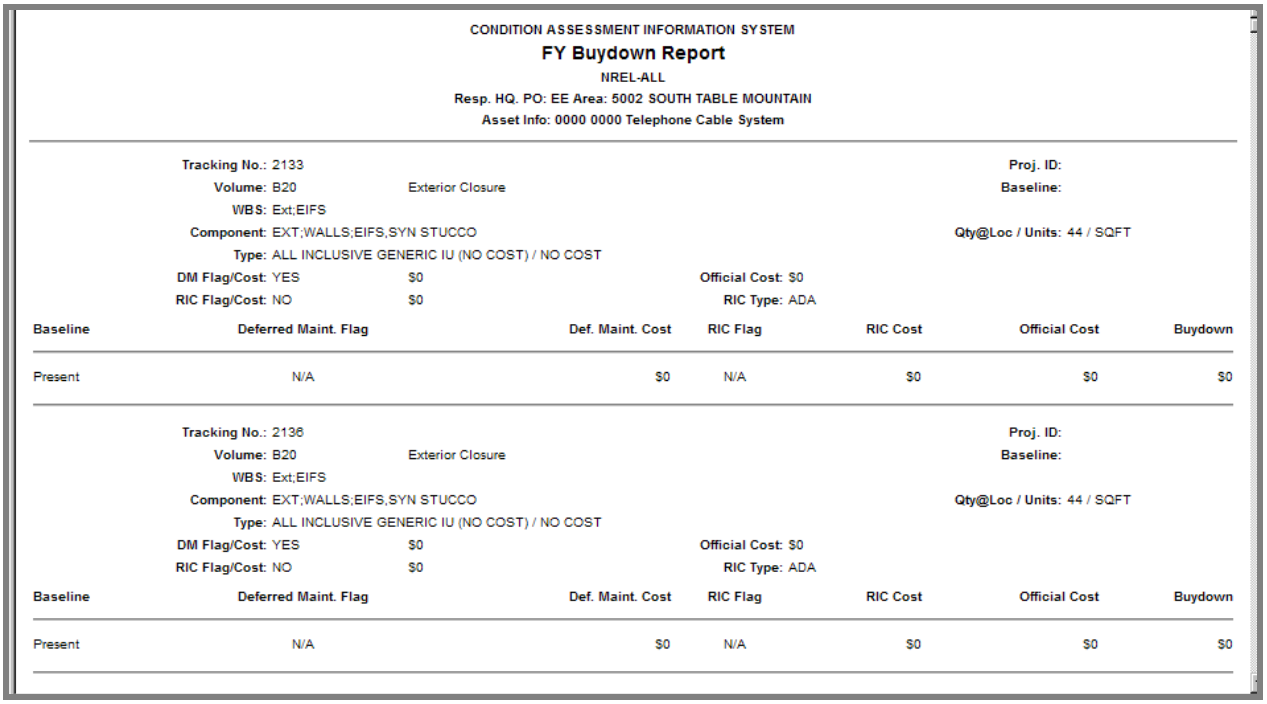


Figure 73 IU Level Report Selection Screen

Figure 74 shows a sample Costing: FY Buydown Report.



CONDITION ASSESSMENT INFORMATION SYSTEM

FY Buydown Report

NREL-ALL

Resp. HQ. PO: EE Area: 5002 SOUTH TABLE MOUNTAIN

Asset Info: 0000 0000 Telephone Cable System

Tracking No.: 2133 **Proj. ID:**
Volume: B20 Exterior Closure **Baseline:**
WBS: Ext;EIFS
Component: EXT;WALLS;EIFS,SYN STUCCO **Qty@Loc / Units:** 44 / SQFT
Type: ALL INCLUSIVE GENERIC IU (NO COST) / NO COST
DM Flag/Cost: YES $0 **Official Cost:** $0
RIC Flag/Cost: NO $0 **RIC Type:** ADA

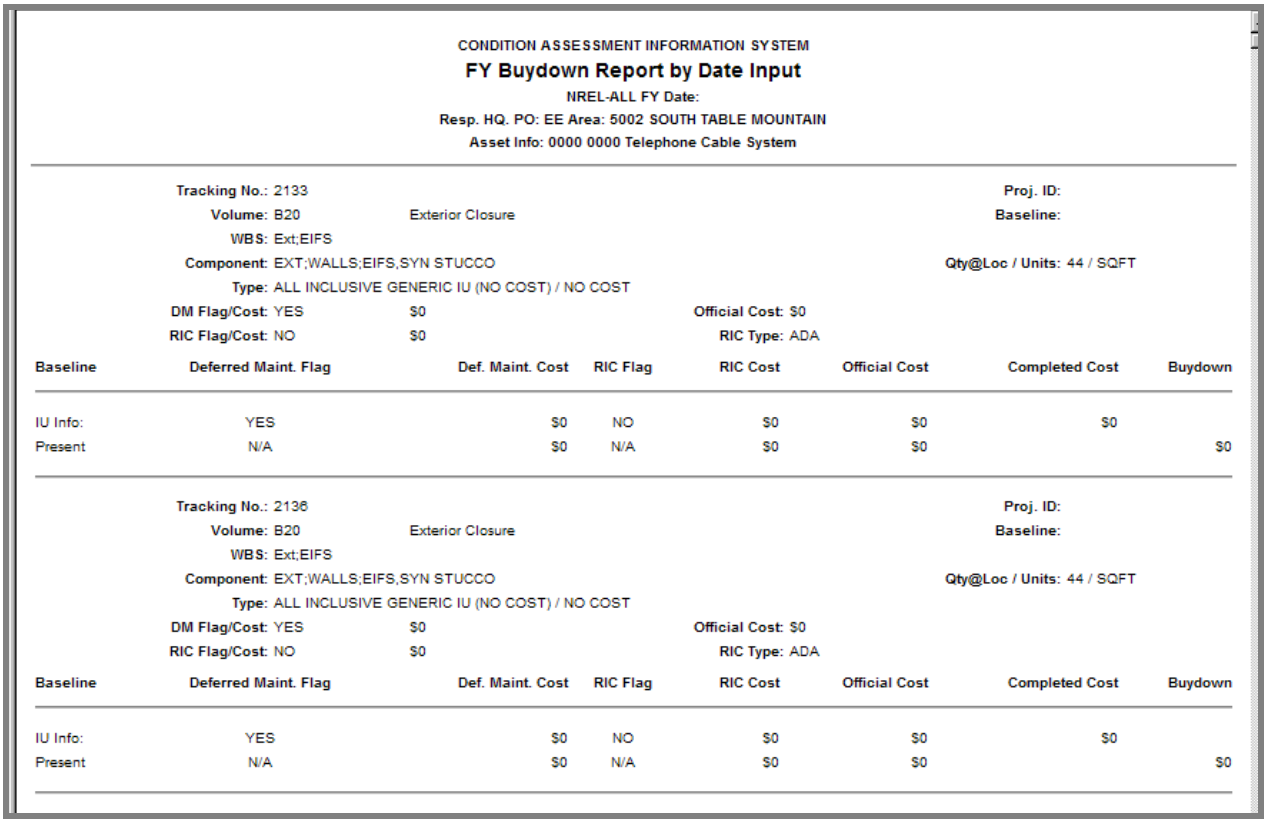
Baseline	Deferred Maint. Flag	Def. Maint. Cost	RIC Flag	RIC Cost	Official Cost	Buydown
Present	N/A	$0	N/A	$0	$0	$0

Tracking No.: 2136 **Proj. ID:**
Volume: B20 Exterior Closure **Baseline:**
WBS: Ext;EIFS
Component: EXT;WALLS;EIFS,SYN STUCCO **Qty@Loc / Units:** 44 / SQFT
Type: ALL INCLUSIVE GENERIC IU (NO COST) / NO COST
DM Flag/Cost: YES $0 **Official Cost:** $0
RIC Flag/Cost: NO $0 **RIC Type:** ADA

Baseline	Deferred Maint. Flag	Def. Maint. Cost	RIC Flag	RIC Cost	Official Cost	Buydown
Present	N/A	$0	N/A	$0	$0	$0

Figure 74 Costing: FY Buydown Report

Figure 75 shows a sample Costing: FY Buydown Report by Date Input.



CONDITION ASSESSMENT INFORMATION SYSTEM

FY Buydown Report by Date Input

NREL-ALL FY Date:

Resp. HQ. PO: EE Area: 5002 SOUTH TABLE MOUNTAIN

Asset Info: 0000 0000 Telephone Cable System

Tracking No.: 2133 — **Proj. ID:**
Volume: B20 Exterior Closure — **Baseline:**
WBS: Ext;EIFS
Component: EXT;WALLS;EIFS,SYN STUCCO — **Qty@Loc / Units:** 44 / SQFT
Type: ALL INCLUSIVE GENERIC IU (NO COST) / NO COST
DM Flag/Cost: YES $0 — **Official Cost:** $0
RIC Flag/Cost: NO $0 — **RIC Type:** ADA

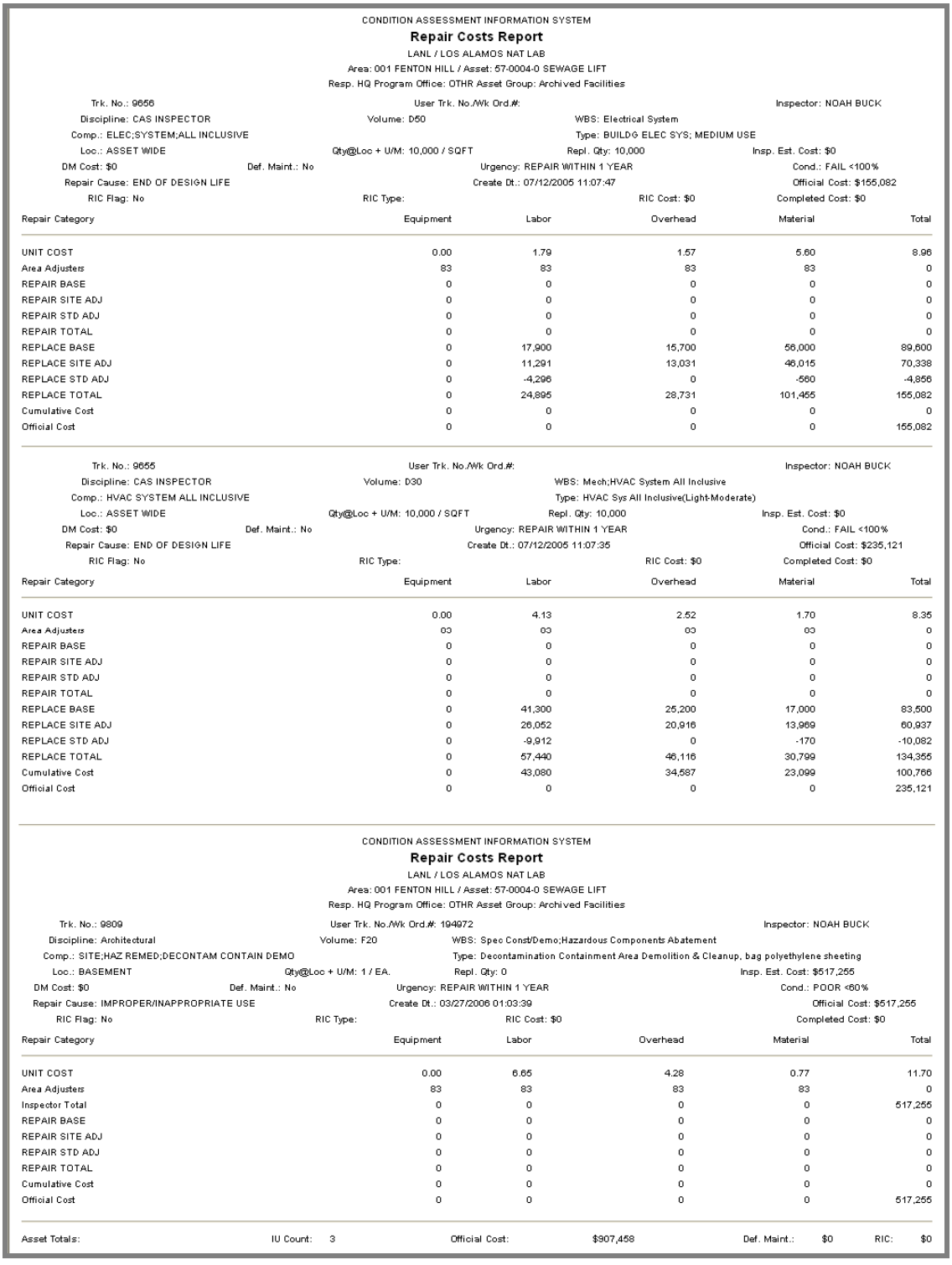
Baseline	Deferred Maint. Flag	Def. Maint. Cost	RIC Flag	RIC Cost	Official Cost	Completed Cost	Buydown
IU Info:	YES	$0	NO	$0	$0	$0	
Present	N/A	$0	N/A	$0	$0		$0

Tracking No.: 2136 — **Proj. ID:**
Volume: B20 Exterior Closure — **Baseline:**
WBS: Ext;EIFS
Component: EXT;WALLS;EIFS,SYN STUCCO — **Qty@Loc / Units:** 44 / SQFT
Type: ALL INCLUSIVE GENERIC IU (NO COST) / NO COST
DM Flag/Cost: YES $0 — **Official Cost:** $0
RIC Flag/Cost: NO $0 — **RIC Type:** ADA

Baseline	Deferred Maint. Flag	Def. Maint. Cost	RIC Flag	RIC Cost	Official Cost	Completed Cost	Buydown
IU Info:	YES	$0	NO	$0	$0	$0	
Present	N/A	$0	N/A	$0	$0		$0

Figure 75 Costing: FY Buydown Report by Date Input

Figure 76 shows a sample Repair Costs Report.



CONDITION ASSESSMENT INFORMATION SYSTEM

Repair Costs Report

LANL / LOS ALAMOS NAT LAB

Area: 001 FENTON HILL / Asset: 57-0004-0 SEWAGE LIFT

Resp. HQ Program Office: OTHR Asset Group: Archived Facilities

Trk. No.: 9656 | User Trk. No./Wk Ord.#: | Inspector: NOAH BUCK

Discipline: CAS INSPECTOR | Volume: D50 | WBS: Electrical System

Comp.: ELEC;SYSTEM;ALL INCLUSIVE | Type: BUILDG ELEC SYS; MEDIUM USE

Loc.: ASSET WIDE | Qty@Loc + U/M: 10,000 / SQFT | Repl. Qty: 10,000 | Insp. Est. Cost: $0

DM Cost: $0 | Def. Maint.: No | Urgency: REPAIR WITHIN 1 YEAR | Cond.: FAIL <100%

Repair Cause: END OF DESIGN LIFE | Create Dt.: 07/12/2005 11:07:47 | Official Cost: $155,082

RIC Flag: No | RIC Type: | RIC Cost: $0 | Completed Cost: $0

Repair Category	Equipment	Labor	Overhead	Material	Total
UNIT COST	0.00	1.79	1.57	5.60	8.96
Area Adjusters	83	83	83	83	0
REPAIR BASE	0	0	0	0	0
REPAIR SITE ADJ	0	0	0	0	0
REPAIR STD ADJ	0	0	0	0	0
REPAIR TOTAL	0	0	0	0	0
REPLACE BASE	0	17,900	15,700	56,000	89,600
REPLACE SITE ADJ	0	11,291	13,031	46,015	70,338
REPLACE STD ADJ	0	-4,296	0	-560	-4,856
REPLACE TOTAL	0	24,895	28,731	101,455	155,082
Cumulative Cost	0	0	0	0	0
Official Cost	0	0	0	0	155,082

Trk. No.: 9655 | User Trk. No./Wk Ord.#: | Inspector: NOAH BUCK

Discipline: CAS INSPECTOR | Volume: D30 | WBS: Mech;HVAC System All Inclusive

Comp.: HVAC SYSTEM ALL INCLUSIVE | Type: HVAC Sys All Inclusive(Light-Moderate)

Loc.: ASSET WIDE | Qty@Loc + U/M: 10,000 / SQFT | Repl. Qty: 10,000 | Insp. Est. Cost: $0

DM Cost: $0 | Def. Maint.: No | Urgency: REPAIR WITHIN 1 YEAR | Cond.: FAIL <100%

Repair Cause: END OF DESIGN LIFE | Create Dt.: 07/12/2005 11:07:35 | Official Cost: $235,121

RIC Flag: No | RIC Type: | RIC Cost: $0 | Completed Cost: $0

Repair Category	Equipment	Labor	Overhead	Material	Total
UNIT COST	0.00	4.13	2.52	1.70	8.35
Area Adjusters	83	83	83	83	0
REPAIR BASE	0	0	0	0	0
REPAIR SITE ADJ	0	0	0	0	0
REPAIR STD ADJ	0	0	0	0	0
REPAIR TOTAL	0	0	0	0	0
REPLACE BASE	0	41,300	25,200	17,000	83,500
REPLACE SITE ADJ	0	26,052	20,916	13,969	60,937
REPLACE STD ADJ	0	-9,912	0	-170	-10,082
REPLACE TOTAL	0	57,440	46,116	30,799	134,355
Cumulative Cost	0	43,080	34,587	23,099	100,766
Official Cost	0	0	0	0	235,121

CONDITION ASSESSMENT INFORMATION SYSTEM

Repair Costs Report

LANL / LOS ALAMOS NAT LAB

Area: 001 FENTON HILL / Asset: 57-0004-0 SEWAGE LIFT

Resp. HQ Program Office: OTHR Asset Group: Archived Facilities

Trk. No.: 9809 | User Trk. No./Wk Ord.#: 194972 | Inspector: NOAH BUCK

Discipline: Architectural | Volume: F20 | WBS: Spec Const/Demo;Hazardous Components Abatement

Comp.: SITE;HAZ REMED;DECONTAM CONTAIN DEMO | Type: Decontamination Containment Area Demolition & Cleanup, bag polyethylene sheeting

Loc.: BASEMENT | Qty@Loc + U/M: 1 / EA. | Repl. Qty: 0 | Insp. Est. Cost: $517,255

DM Cost: $0 | Def. Maint.: No | Urgency: REPAIR WITHIN 1 YEAR | Cond.: POOR <60%

Repair Cause: IMPROPER/INAPPROPRIATE USE | Create Dt.: 03/27/2006 01:03:39 | Official Cost: $517,255

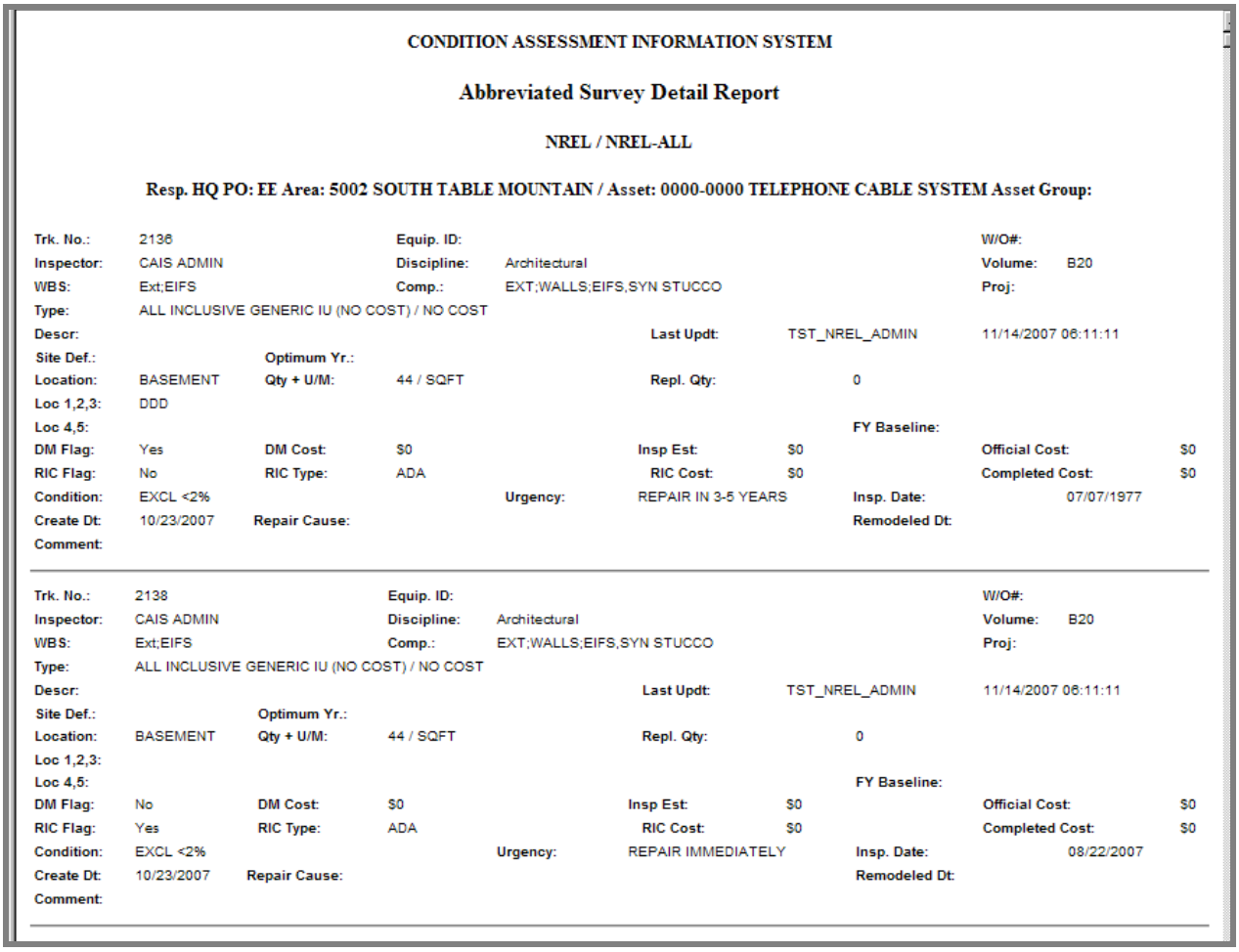
RIC Flag: No | RIC Type: | RIC Cost: $0 | Completed Cost: $0

Repair Category	Equipment	Labor	Overhead	Material	Total
UNIT COST	0.00	6.65	4.28	0.77	11.70
Area Adjusters	83	83	83	83	0
Inspector Total	0	0	0	0	517,255
REPAIR BASE	0	0	0	0	0
REPAIR SITE ADJ	0	0	0	0	0
REPAIR STD ADJ	0	0	0	0	0
REPAIR TOTAL	0	0	0	0	0
Cumulative Cost	0	0	0	0	0
Official Cost	0	0	0	0	517,255

Asset Totals: | IU Count: 3 | Official Cost: $907,458 | Def. Maint.: $0 | RIC: $0

Figure 76 Repair Costs Report

Figure 77 shows a sample Abbreviated Survey Detail Report.



CONDITION ASSESSMENT INFORMATION SYSTEM

Abbreviated Survey Detail Report

NREL / NREL-ALL

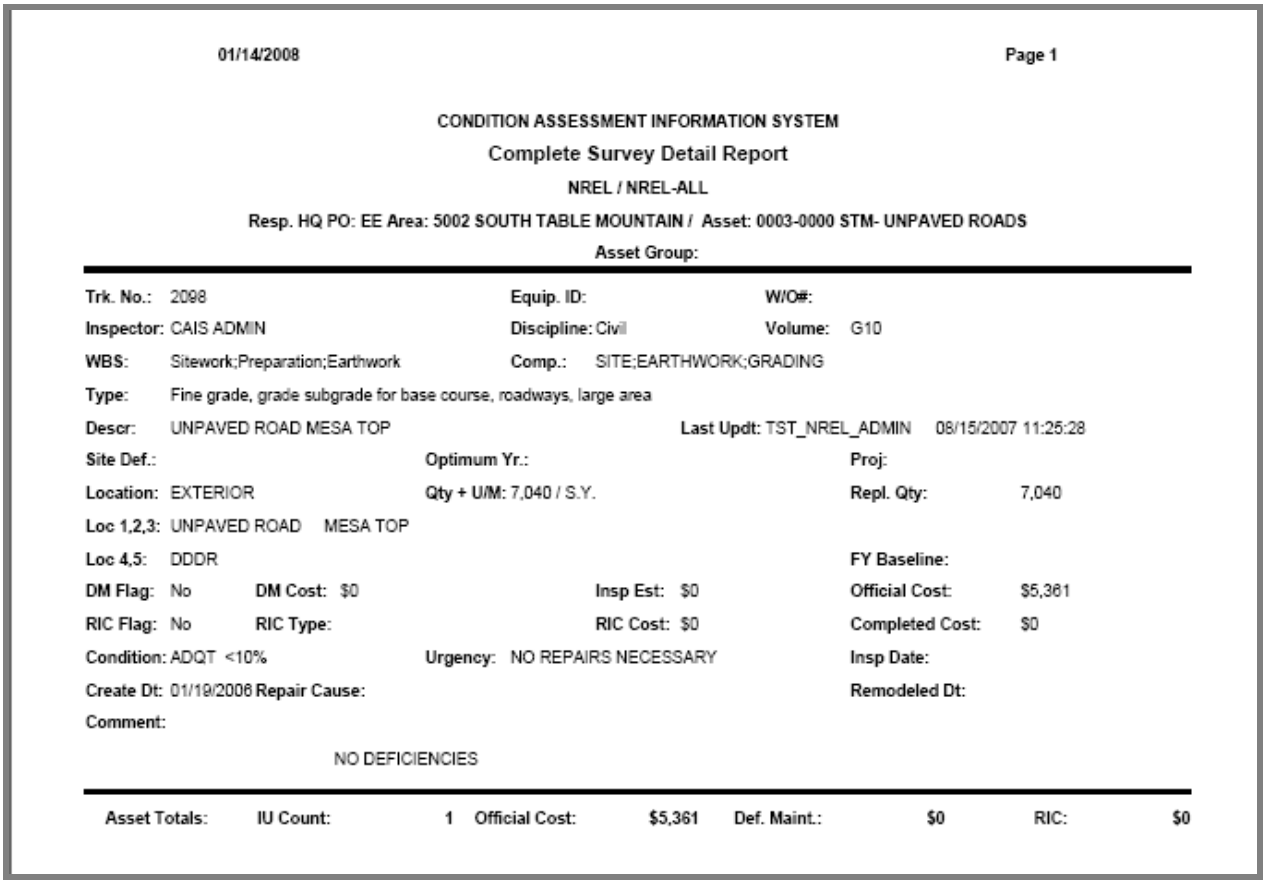
Resp. HQ PO: EE Area: 5002 SOUTH TABLE MOUNTAIN / Asset: 0000-0000 TELEPHONE CABLE SYSTEM Asset Group:

Trk. No.:	2136		**Equip. ID:**					**W/O#:**	
Inspector:	CAIS ADMIN		**Discipline:**	Architectural				**Volume:**	B20
WBS:	Ext;EIFS		**Comp.:**	EXT;WALLS;EIFS,SYN STUCCO				**Proj:**	
Type:	ALL INCLUSIVE GENERIC IU (NO COST) / NO COST								
Descr:					**Last Updt:**	TST_NREL_ADMIN		11/14/2007 06:11:11	
Site Def.:		**Optimum Yr.:**							
Location:	BASEMENT	**Qty + U/M:**	44 / SQFT		**Repl. Qty:**	0			
Loc 1,2,3:	DDD								
Loc 4,5:						**FY Baseline:**			
DM Flag:	Yes	**DM Cost:**	$0		**Insp Est:**	$0		**Official Cost:**	$0
RIC Flag:	No	**RIC Type:**	ADA		**RIC Cost:**	$0		**Completed Cost:**	$0
Condition:	EXCL <2%			**Urgency:**	REPAIR IN 3-5 YEARS		**Insp. Date:**	07/07/1977	
Create Dt:	10/23/2007	**Repair Cause:**					**Remodeled Dt:**		
Comment:									

Trk. No.:	2138		**Equip. ID:**					**W/O#:**	
Inspector:	CAIS ADMIN		**Discipline:**	Architectural				**Volume:**	B20
WBS:	Ext;EIFS		**Comp.:**	EXT;WALLS;EIFS,SYN STUCCO				**Proj:**	
Type:	ALL INCLUSIVE GENERIC IU (NO COST) / NO COST								
Descr:					**Last Updt:**	TST_NREL_ADMIN		11/14/2007 06:11:11	
Site Def.:		**Optimum Yr.:**							
Location:	BASEMENT	**Qty + U/M:**	44 / SQFT		**Repl. Qty:**	0			
Loc 1,2,3:									
Loc 4,5:						**FY Baseline:**			
DM Flag:	No	**DM Cost:**	$0		**Insp Est:**	$0		**Official Cost:**	$0
RIC Flag:	Yes	**RIC Type:**	ADA		**RIC Cost:**	$0		**Completed Cost:**	$0
Condition:	EXCL <2%			**Urgency:**	REPAIR IMMEDIATELY		**Insp. Date:**	08/22/2007	
Create Dt:	10/23/2007	**Repair Cause:**					**Remodeled Dt:**		
Comment:									

Figure 77 Abbreviated Survey Detail Report

Figure 78 shows a sample Complete Survey Detail Report.



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CONDITION ASSESSMENT INFORMATION SYSTEM

Complete Survey Detail Report

NREL / NREL-ALL

Resp. HQ PO: EE Area: 5002 SOUTH TABLE MOUNTAIN / Asset: 0003-0000 STM- UNPAVED ROADS

Asset Group:

Trk. No.:	2098	Equip. ID:		W/O#:	
Inspector:	CAIS ADMIN	Discipline:	Civil	Volume:	G10
WBS:	Sitework;Preparation;Earthwork	Comp.:	SITE;EARTHWORK;GRADING		
Type:	Fine grade, grade subgrade for base course, roadways, large area				
Descr:	UNPAVED ROAD MESA TOP			Last Updt:	TST_NREL_ADMIN 08/15/2007 11:25:28
Site Def.:		Optimum Yr.:		Proj:	
Location:	EXTERIOR	Qty + U/M:	7,040 / S.Y.	Repl. Qty:	7,040
Loc 1,2,3:	UNPAVED ROAD MESA TOP				
Loc 4,5:	DDDR			FY Baseline:	
DM Flag:	No	DM Cost: $0	Insp Est: $0	Official Cost:	$5,361
RIC Flag:	No	RIC Type:	RIC Cost: $0	Completed Cost:	$0
Condition:	ADQT <10%	Urgency:	NO REPAIRS NECESSARY	Insp Date:	
Create Dt:	01/19/2006	Repair Cause:		Remodeled Dt:	

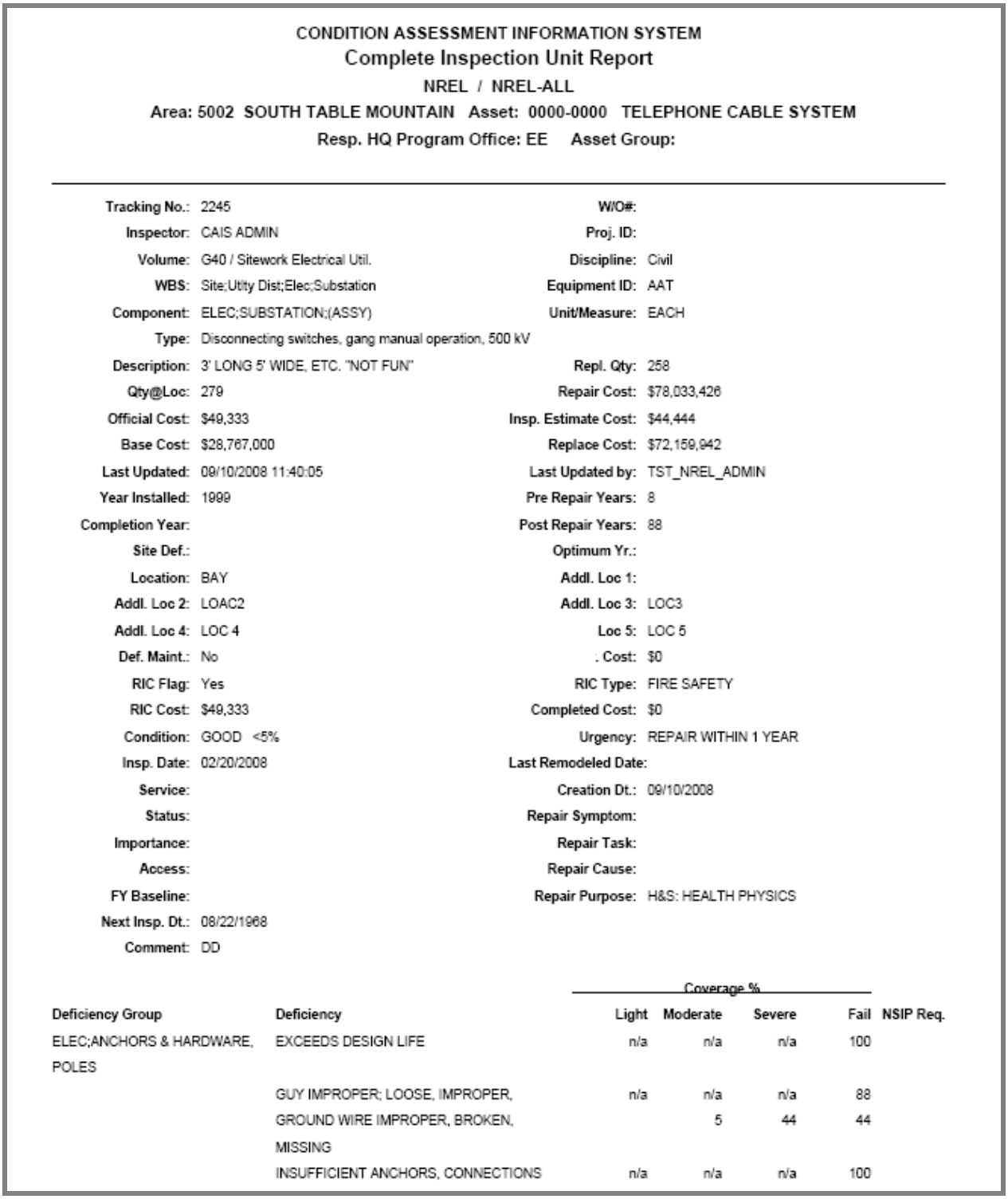
Comment:

NO DEFICIENCIES

Asset Totals:	IU Count:	1	Official Cost:	$5,361	Def. Maint.:	$0	RIC:	$0

Figure 78 Complete Survey Detail Report

Figure 79 shows a sample Inspection Unit (Complete) Report.



CONDITION ASSESSMENT INFORMATION SYSTEM

Complete Inspection Unit Report

NREL / NREL-ALL

Area: 5002 SOUTH TABLE MOUNTAIN Asset: 0000-0000 TELEPHONE CABLE SYSTEM

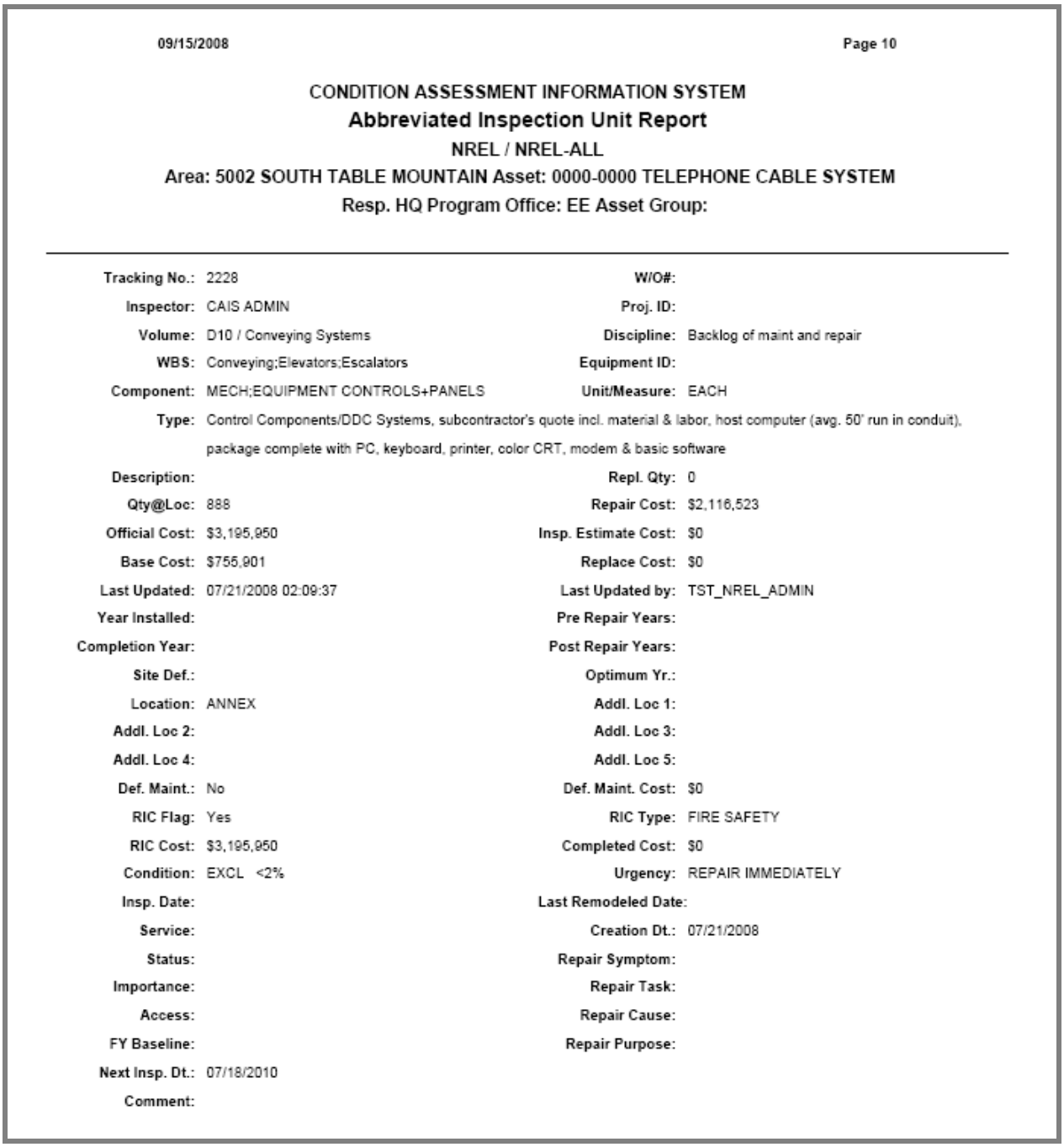
Resp. HQ Program Office: EE Asset Group:

Tracking No.:	2245	W/O#:	
Inspector:	CAIS ADMIN	Proj. ID:	
Volume:	G40 / Sitework Electrical Util.	Discipline:	Civil
WBS:	Site;Utity Dist;Elec;Substation	Equipment ID:	AAT
Component:	ELEC;SUBSTATION;(ASSY)	Unit/Measure:	EACH
Type:	Disconnecting switches, gang manual operation, 500 kV		
Description:	3' LONG 5' WIDE, ETC. "NOT FUN"	Repl. Qty:	258
Qty@Loc:	279	Repair Cost:	$78,033,426
Official Cost:	$49,333	Insp. Estimate Cost:	$44,444
Base Cost:	$28,767,000	Replace Cost:	$72,159,942
Last Updated:	09/10/2008 11:40:05	Last Updated by:	TST_NREL_ADMIN
Year Installed:	1999	Pre Repair Years:	8
Completion Year:		Post Repair Years:	88
Site Def.:		Optimum Yr.:	
Location:	BAY	Addl. Loc 1:	
Addl. Loc 2:	LOAC2	Addl. Loc 3:	LOC3
Addl. Loc 4:	LOC 4	Loc 5:	LOC 5
Def. Maint.:	No	. Cost:	$0
RIC Flag:	Yes	RIC Type:	FIRE SAFETY
RIC Cost:	$49,333	Completed Cost:	$0
Condition:	GOOD <5%	Urgency:	REPAIR WITHIN 1 YEAR
Insp. Date:	02/20/2008	Last Remodeled Date:	
Service:		Creation Dt.:	09/10/2008
Status:		Repair Symptom:	
Importance:		Repair Task:	
Access:		Repair Cause:	
FY Baseline:		Repair Purpose:	H&S: HEALTH PHYSICS
Next Insp. Dt.:	08/22/1968		
Comment:	DD		

		Coverage %				
Deficiency Group	Deficiency	Light	Moderate	Severe	Fail	NSIP Req.
ELEC;ANCHORS & HARDWARE, POLES	EXCEEDS DESIGN LIFE	n/a	n/a	n/a	100	
	GUY IMPROPER; LOOSE, IMPROPER, GROUND WIRE IMPROPER, BROKEN, MISSING	n/a	n/a 5	n/a 44	88 44	
	INSUFFICIENT ANCHORS, CONNECTIONS	n/a	n/a	n/a	100	

Figure 79 Inspection Unit (Complete) Report

Figure 80 shows a sample Inspection Unit (Abbreviated) Report.



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CONDITION ASSESSMENT INFORMATION SYSTEM

Abbreviated Inspection Unit Report

NREL / NREL-ALL

Area: 5002 SOUTH TABLE MOUNTAIN Asset: 0000-0000 TELEPHONE CABLE SYSTEM

Resp. HQ Program Office: EE Asset Group:

Tracking No.:	2228	**W/O#:**	
Inspector:	CAIS ADMIN	**Proj. ID:**	
Volume:	D10 / Conveying Systems	**Discipline:**	Backlog of maint and repair
WBS:	Conveying;Elevators;Escalators	**Equipment ID:**	
Component:	MECH;EQUIPMENT CONTROLS+PANELS	**Unit/Measure:**	EACH
Type:	Control Components/DDC Systems, subcontractor's quote incl. material & labor, host computer (avg. 50' run in conduit), package complete with PC, keyboard, printer, color CRT, modem & basic software		
Description:		**Repl. Qty:**	0
Qty@Loc:	888	**Repair Cost:**	$2,116,523
Official Cost:	$3,195,950	**Insp. Estimate Cost:**	$0
Base Cost:	$755,901	**Replace Cost:**	$0
Last Updated:	07/21/2008 02:09:37	**Last Updated by:**	TST_NREL_ADMIN
Year Installed:		**Pre Repair Years:**	
Completion Year:		**Post Repair Years:**	
Site Def.:		**Optimum Yr.:**	
Location:	ANNEX	**Addl. Loc 1:**	
Addl. Loc 2:		**Addl. Loc 3:**	
Addl. Loc 4:		**Addl. Loc 5:**	
Def. Maint.:	No	**Def. Maint. Cost:**	$0
RIC Flag:	Yes	**RIC Type:**	FIRE SAFETY
RIC Cost:	$3,195,950	**Completed Cost:**	$0
Condition:	EXCL <2%	**Urgency:**	REPAIR IMMEDIATELY
Insp. Date:		**Last Remodeled Date:**	
Service:		**Creation Dt.:**	07/21/2008
Status:		**Repair Symptom:**	
Importance:		**Repair Task:**	
Access:		**Repair Cause:**	
FY Baseline:		**Repair Purpose:**	
Next Insp. Dt.:	07/18/2010		
Comment:			

Figure 80 Inspection Unit (Abbreviated) Report

4.4 Summary Condition Report

This report gives a comprehensive overview of each major system for the asset selected. This report was the first report that we are aware of that used the RS Means general/generic models available at that time to estimate a condition index for the asset and the asset WBS systems. The condition codes used in this report became the guide for the current condition codes in FIMS. The RS Means generic models indicated that DOE needed custom-designed replacement plant values (RPV) models to improve on the quality of its RPV and facility condition indexes estimates; hence, the development of the FIMS models and the more flexible DOE CostWorks Square Foot Models.

The option to select the report is in the Additional Menu as shown in Figure 81.

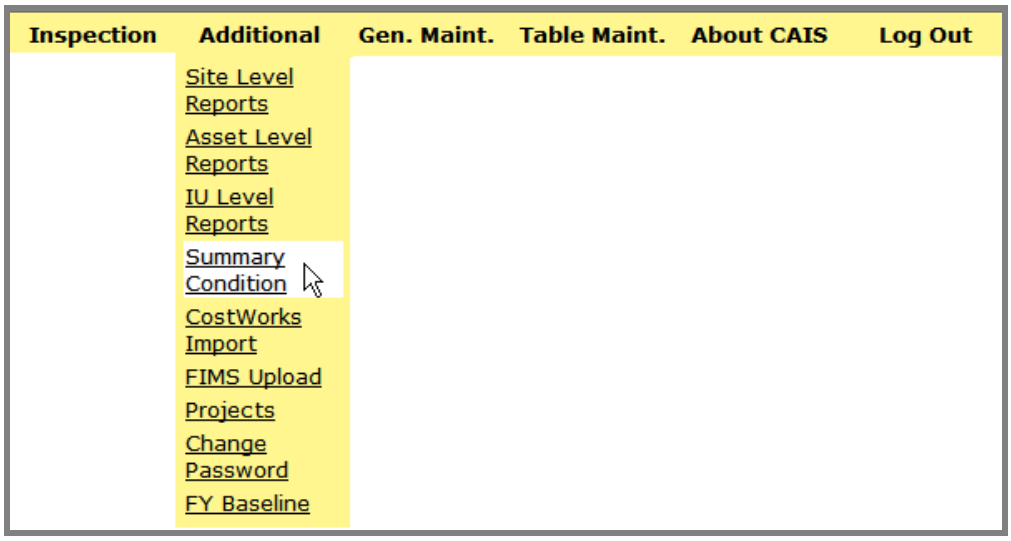


Figure 81 Summary Condition Report Selection Menu

The report selection window is shown in Figure 82.

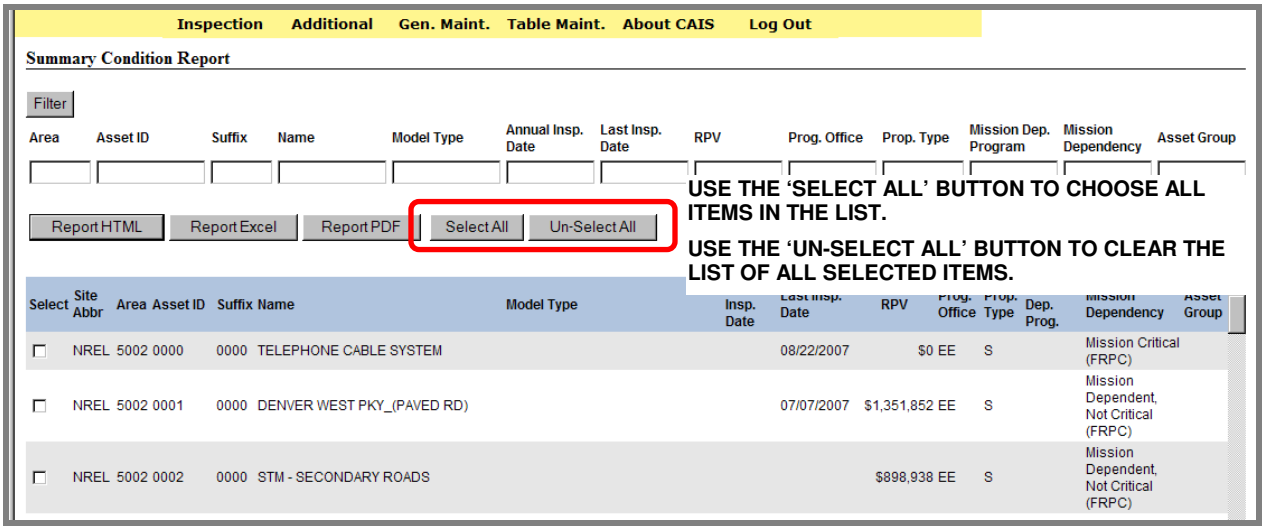


Figure 82 Summary Condition Report Selection Screen

The report is shown in Figure 83.

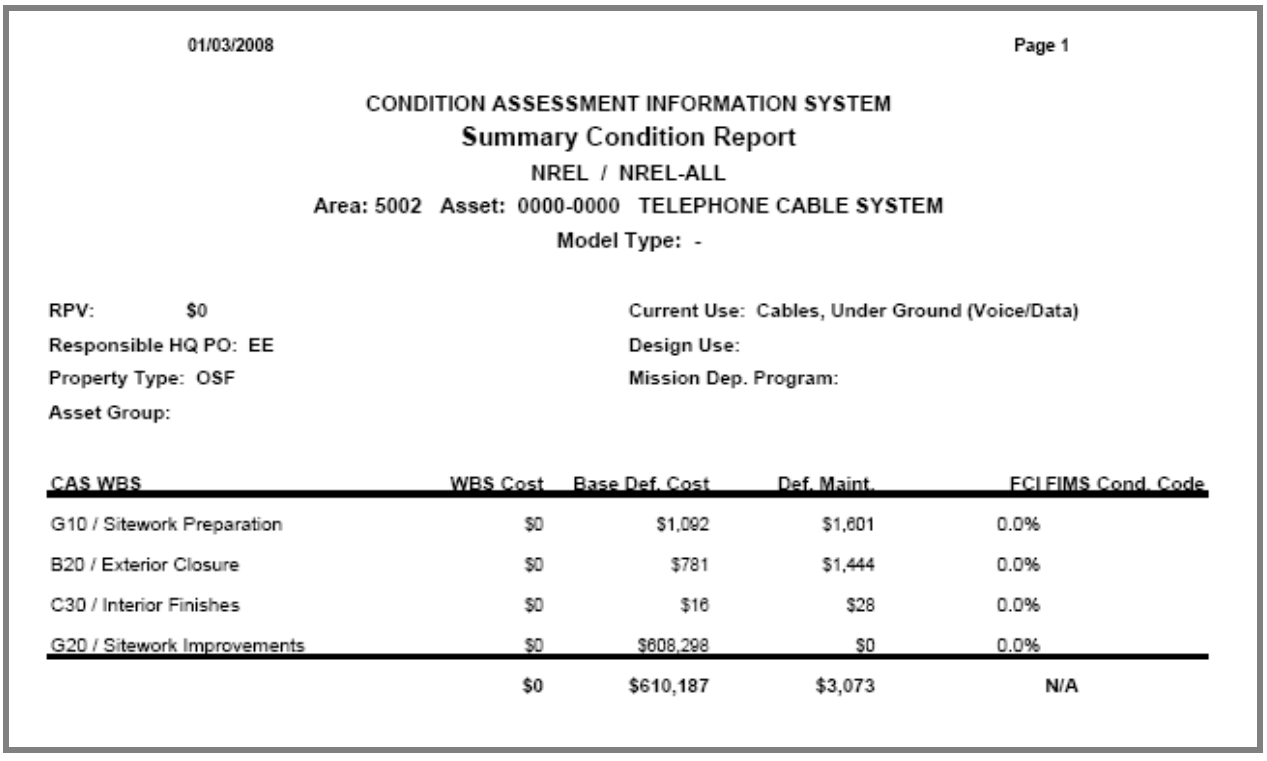


Figure 83 Summary Condition Report

The report uses the same Filter mechanism as Asset and IU Level reports.

The report comprises the following data:

CAS WBS – The Work Breakdown Structure is the list of the CAS inspection systems

WBS Cost – The total cost of the WBS is based on the percentage of this system in the CostWorks and FIMS Model Type selected to generate a Replacement Plant Value (RPV).

Base Deficiency Cost – The cost of the deficiencies found for each WBS excluding cost adders.

Deferred Maintenance – The cost of the deficiencies found for each WBS including all cost adders.

FCI – Is the facility condition index. It is calculated by dividing the Deferred Maintenance Cost by the WBS cost.

Summary Condition – the ratio of Deferred Maintenance to Replacement Plant Value (RPV).

Summary condition ratings are listed below.

$0 \leq 2\%$ Excellent

$2 \leq 5\%$ Good

$5 \leq 10\%$ Adequate

$10 \leq 25\%$ Fair

$25 \leq 60\%$ Poor

$>60\%$ Fail

5. Projects

This section covers how the cost of repairs, replacements and rehab and improvement costs can be assembled into projects for future funding.

CAIS projects can include all IUs regardless of the status of the DM and RIC flags. Prior to release 1.18, one of these flags had to be set to Yes to be included in the project.

Project development is in the Additional/Projects menu shown in Figure 84.

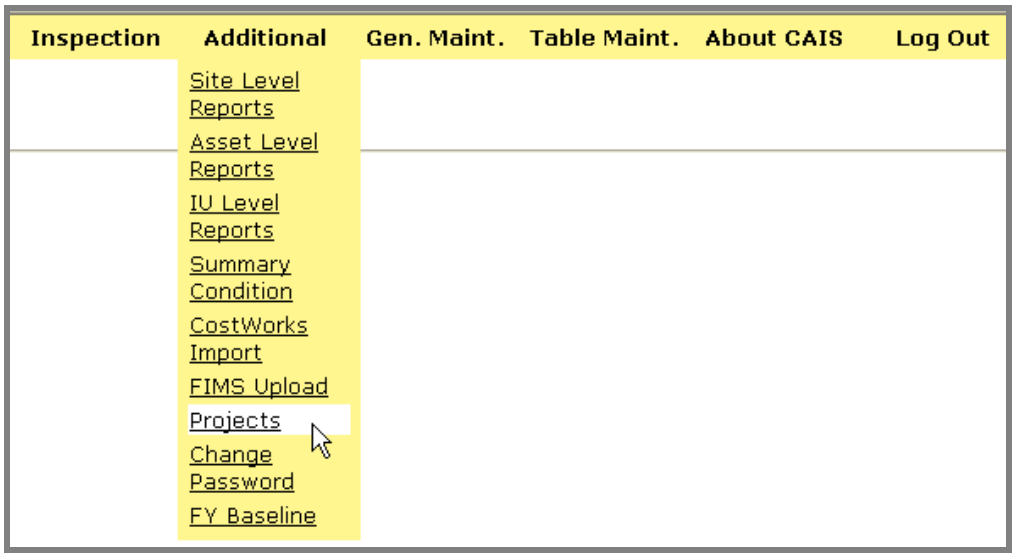


Figure 84 Additional Projects Selection

Click on Projects to open the Project List window shown in Figure 85.

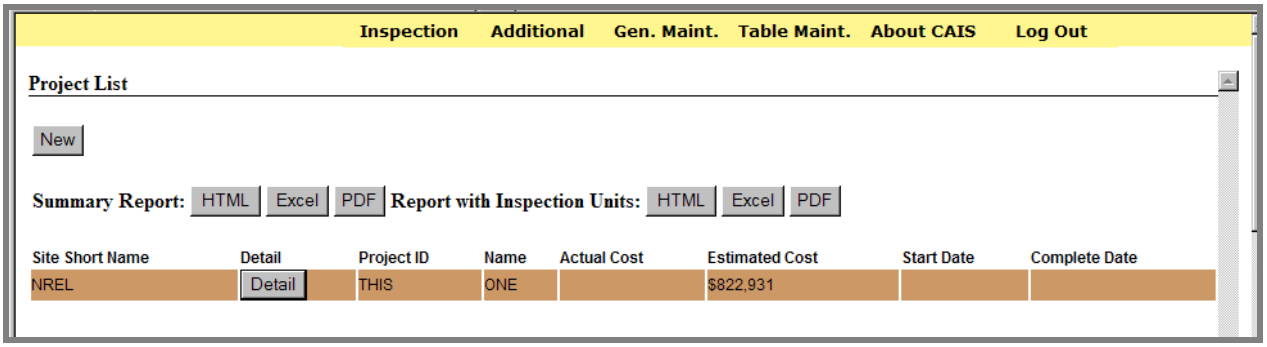


Figure 85 Project List

Click on the New button to open the Blank Project Detail window shown in Figure 86.

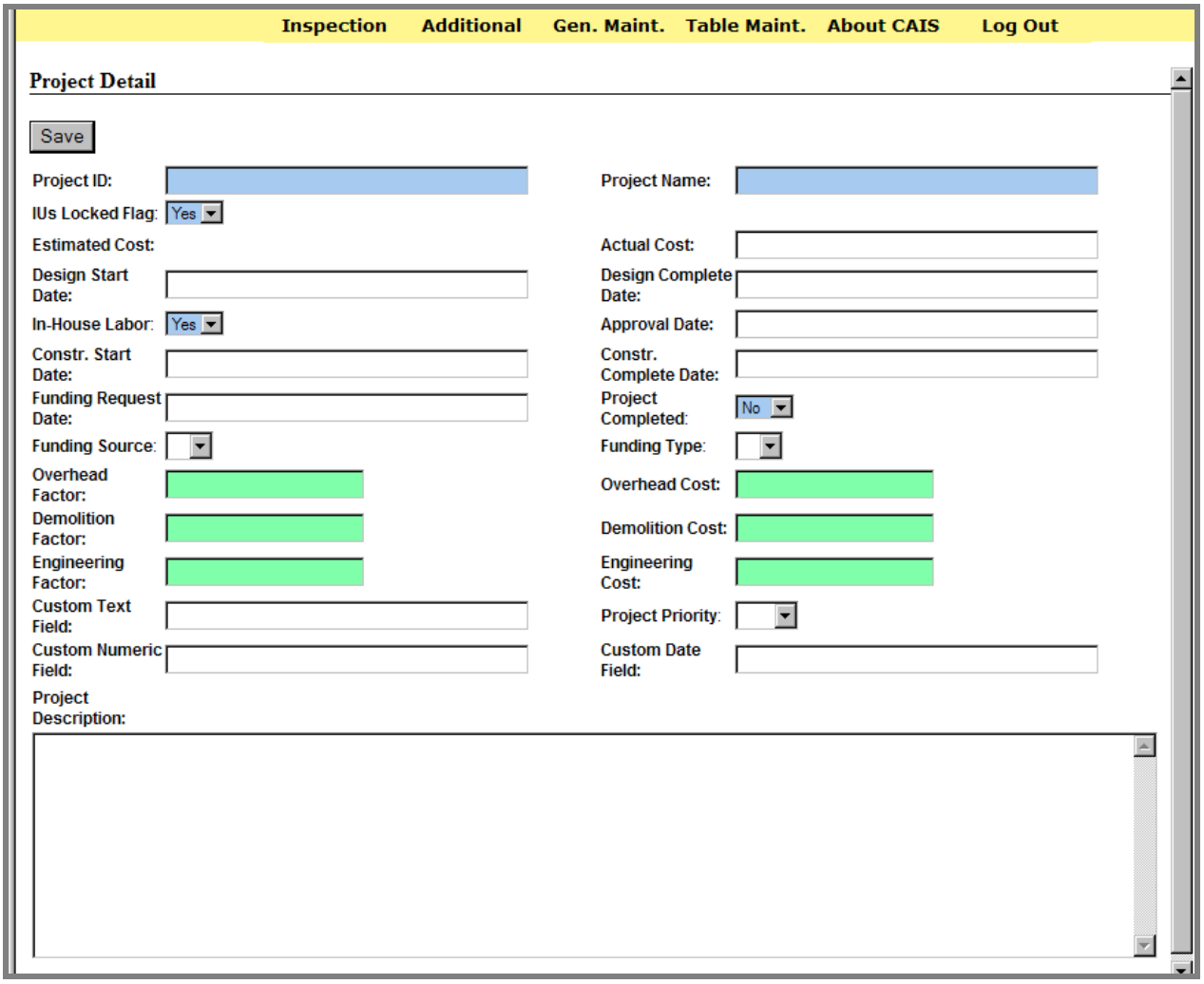


Figure 86 Project Detail Window (New Project)

Click on the Detail button for a project to open its Project Detail window shown in Figure 87.

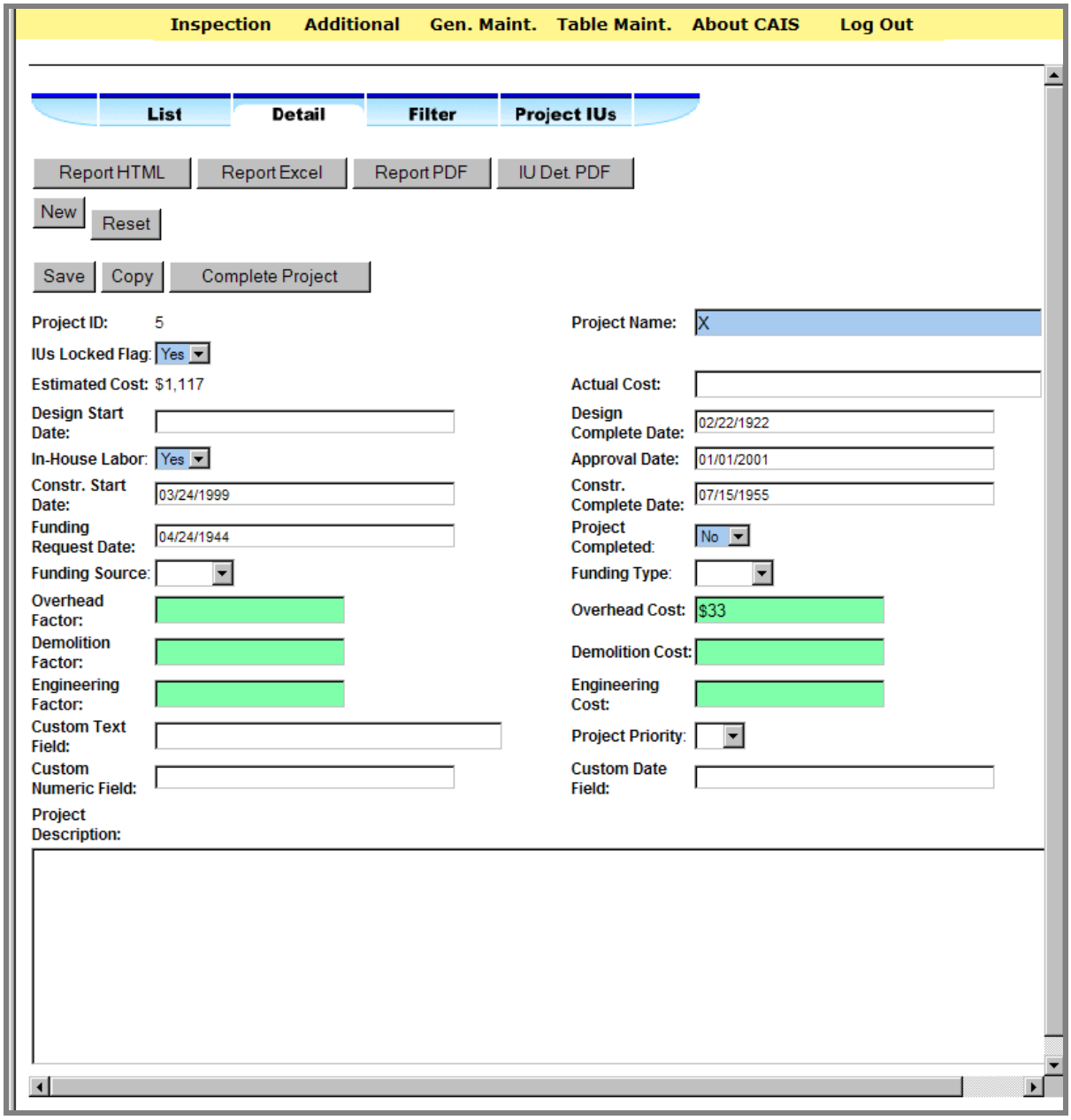


Figure 87 Project Detail Window (Existing Project)

Most of the fields in the Project Detail window are self-explanatory or discussed earlier. Several fields have information that must be obtained from the site project planners or cost estimators. These are the Overhead, Demolition and Engineering factors or their estimated cost; Design and Construction date information and if In-House labor forces will be used. Sites can add additional information in the Custom fields. The color significance continues with this screen. Blue = required and Green = calculation.

Users have the option to enter an Overhead, Demolition and Engineering factor or the actual cost. They can mix the choices but cannot pick both the cost and factor of each cost adjustment.

The Estimated Cost is the sum of the deferred maintenance and the RIC plus the overhead, demolition, and engineering costs or (deferred maintenance+ RIC times the three factors or any combination of costs or factors.

The IU Locked Flag being Yes indicates IUs cannot be changed and No means IUs can be changed.

The Funding Source and Funding Type are defined in the Table Maintenance Menu and will follow Program Office guidance.

After completing the Project information click on the Filter tab and Figure 88 appears.

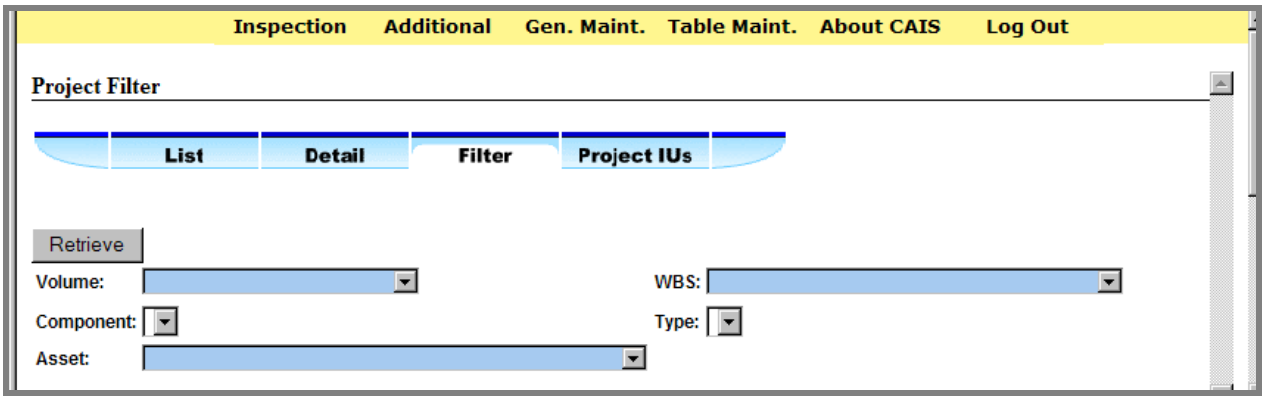


Figure 88 Projects Filter

Figure 87 fields provide the sources of the project deficiency information that will be repaired or replaced by the project. These fields require data entry of deficiency and asset information using the Volume, WBS, Component, Type and Asset dropdown lists.

Once this information is entered, click on the Retrieve button, and the Project Filter WBS screen, Figure 89, appears.

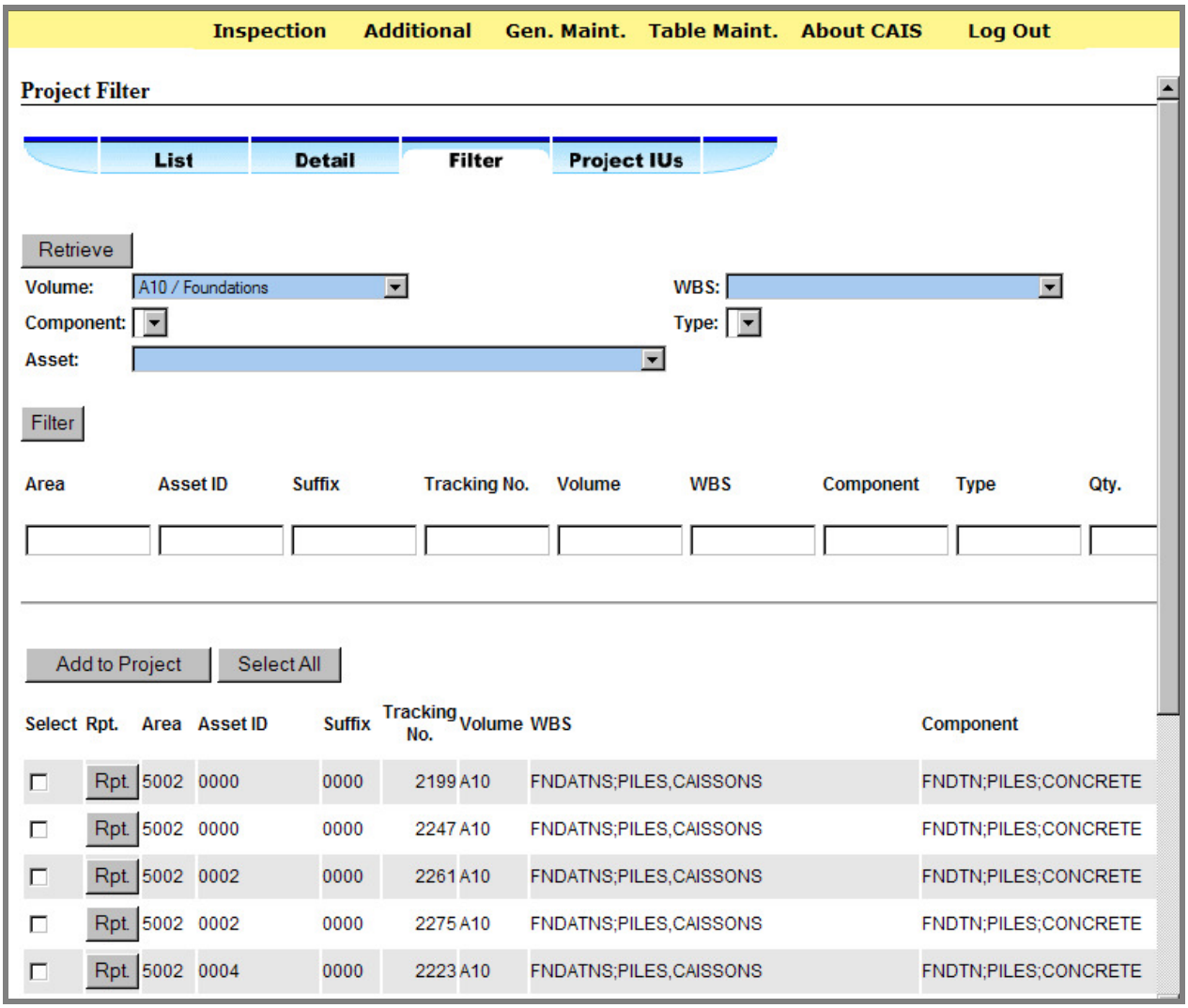


Figure 89 Projects Filter Results Displayed

Figure 89 fields provide the sources of the project deficiency information that will be repaired or replaced by the project. You may filter the existing IUs by the following fields: Volume, WBS, Component, Type and Asset. After filtering by these fields and retrieving the associated IUs by clicking on the Retrieve button and the Projects Filter WBS screen, Figure 88, appears.

You may then do additional filtering by Area, Asset ID, Suffix, Tracking No., Volume, WBS, Component, Type, Quantity, Unit of Measure, Official Cost, Deferred Maintenance Flag, RIC Flag, RIC Type, Urgency, Location, Inspection Date, Equipment ID, and Optimum Year.

When you click on the Rpt button, the IU Detail (Complete) report for the selected IU is displayed in PDF format.

The administrator selects those Inspection Units that will be repaired or replaced by this project by checking the Select boxes on the left of each asset and clicking on the Add to Project button. The project may include more than one asset.

The project is then added to the Project List screen. See Figure 90.

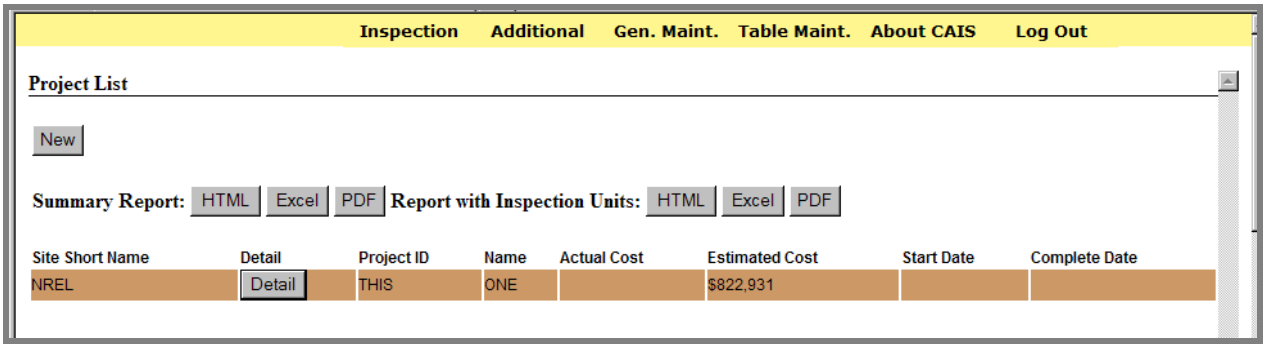
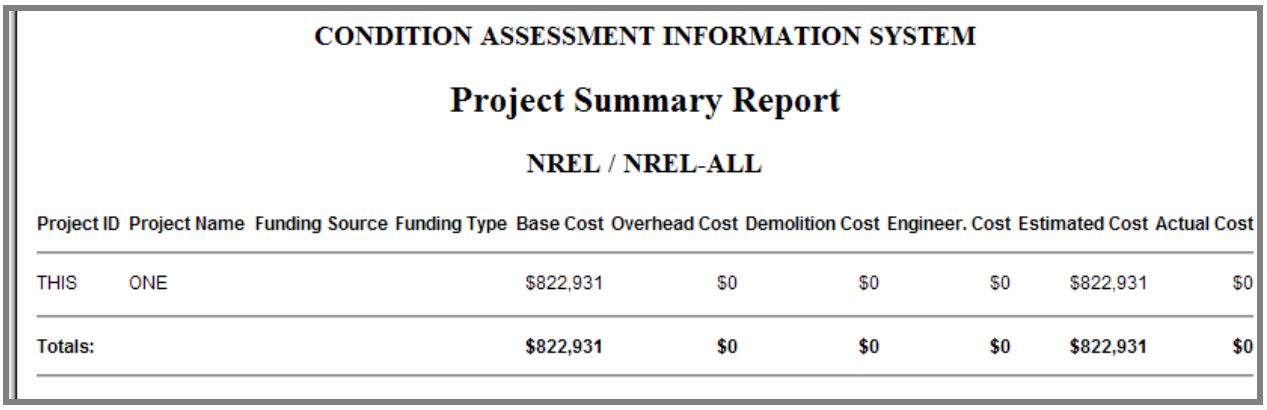


Figure 90 Project List Screen

A Summary report and the IU Detail (Complete) report can be generated in HTML, Excel, or PDF formats from this screen. Figure 91 shows a sample Project Summary report. The IU Detail (Complete) report shows all of the IUs that comprise the project.



CONDITION ASSESSMENT INFORMATION SYSTEM

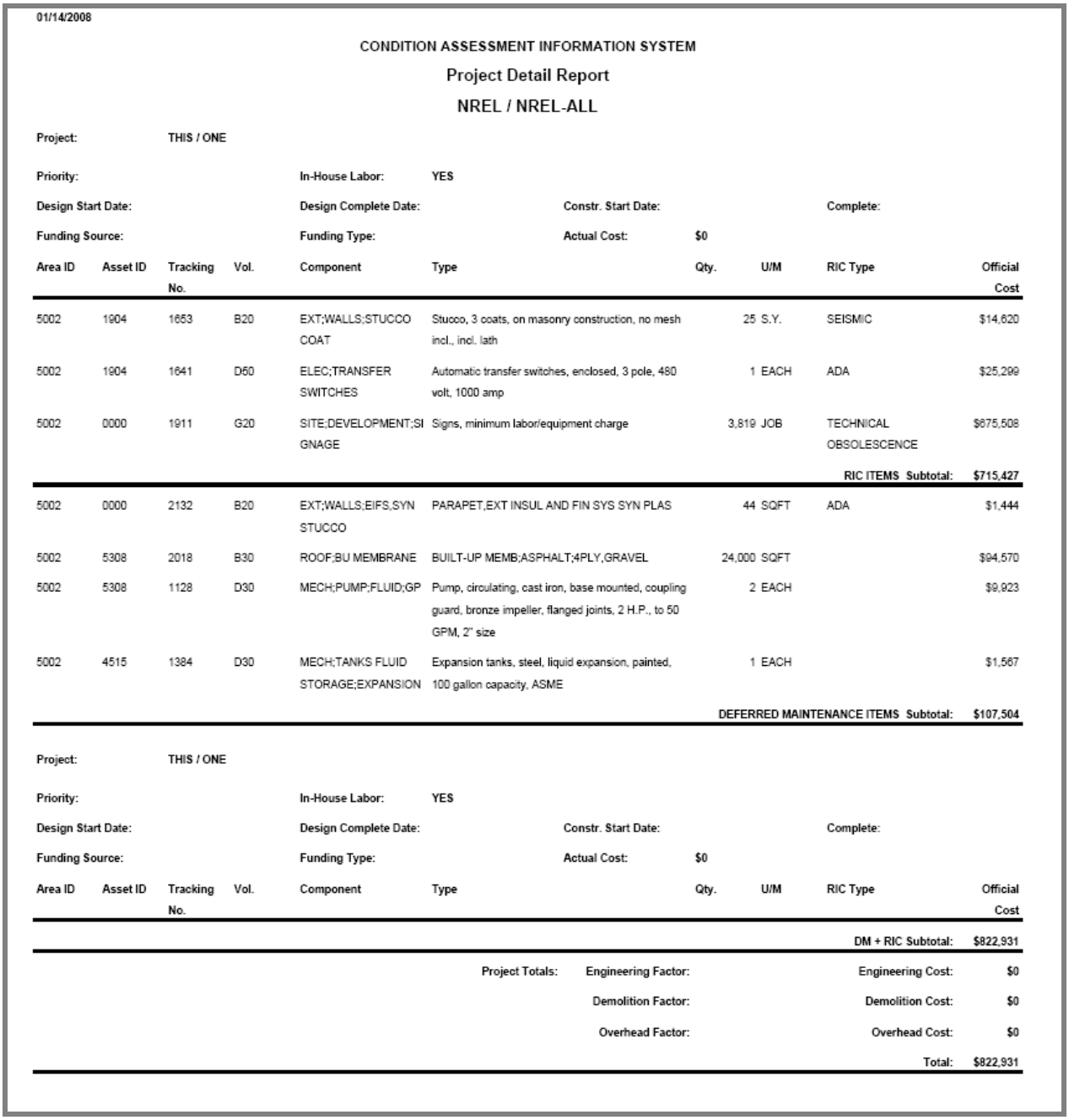
Project Summary Report

NREL / NREL-ALL

Project ID	Project Name	Funding Source	Funding Type	Base Cost	Overhead Cost	Demolition Cost	Engineer. Cost	Estimated Cost	Actual Cost
THIS	ONE			$822,931	$0	$0	$0	$822,931	$0
Totals:				**$822,931**	**$0**	**$0**	**$0**	**$822,931**	**$0**

Figure 91 Project Summary Report

Figure 92 shows a sample Project Inspection Units Report.



01/14/2008

CONDITION ASSESSMENT INFORMATION SYSTEM

Project Detail Report

NREL / NREL-ALL

Project: THIS / ONE

Priority: **In-House Labor:** YES

Design Start Date: **Design Complete Date:** **Constr. Start Date:** **Complete:**

Funding Source: **Funding Type:** **Actual Cost:** $0

Area ID	Asset ID	Tracking No.	Vol.	Component	Type	Qty.	U/M	RIC Type	Official Cost
5002	1904	1653	B20	EXT;WALLS;STUCCO COAT	Stucco, 3 coats, on masonry construction, no mesh incl., incl. lath	25	S.Y.	SEISMIC	$14,620
5002	1904	1641	D50	ELEC;TRANSFER SWITCHES	Automatic transfer switches, enclosed, 3 pole, 480 volt, 1000 amp	1	EACH	ADA	$25,299
5002	0000	1911	G20	SITE;DEVELOPMENT;SIGNAGE	Signs, minimum labor/equipment charge	3,819	JOB	TECHNICAL OBSOLESCENCE	$675,508
								RIC ITEMS Subtotal:	**$715,427**
5002	0000	2132	B20	EXT;WALLS;EIFS,SYN STUCCO	PARAPET,EXT INSUL AND FIN SYS SYN PLAS	44	SQFT	ADA	$1,444
5002	5308	2018	B30	ROOF;BU MEMBRANE	BUILT-UP MEMB;ASPHALT;4PLY,GRAVEL	24,000	SQFT		$94,570
5002	5308	1128	D30	MECH;PUMP;FLUID;GP	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 2 H.P., to 50 GPM, 2" size	2	EACH		$9,923
5002	4515	1384	D30	MECH;TANKS FLUID STORAGE;EXPANSION	Expansion tanks, steel, liquid expansion, painted, 100 gallon capacity, ASME	1	EACH		$1,567
								DEFERRED MAINTENANCE ITEMS Subtotal:	**$107,504**

Project: THIS / ONE

Priority: **In-House Labor:** YES

Design Start Date: **Design Complete Date:** **Constr. Start Date:** **Complete:**

Funding Source: **Funding Type:** **Actual Cost:** $0

Area ID	Asset ID	Tracking No.	Vol.	Component	Type	Qty.	U/M	RIC Type	Official Cost
								DM + RIC Subtotal:	**$822,931**

Project Totals:	**Engineering Factor:**	**Engineering Cost:**	**$0**
	Demolition Factor:	**Demolition Cost:**	**$0**
	Overhead Factor:	**Overhead Cost:**	**$0**
		Total:	**$822,931**

Figure 92 Project Inspection Units Report

6. Interfaces

This section describes how CAIS imports data from the RS Means CostWorks program and exports deferred maintenance costs, the facility condition index, and deficient component/ systems data to FIMS.

CAIS has two interfaces: (1) CAIS imports building model system percentages from the RS Means CostWorks program, and (2) exports deferred maintenance costs and system deficiency information to FIMS.

6.1 Import from CostWorks

CAIS imports replacement plant value model information from the RS Means CostWorks program. CostWorks is a Windows based application that provides cost data in RS Means costbooks. CAIS uses the Square Foot models to estimate the building system percentages. These percentages are applied to the asset replacement plant value to estimate a system or WBS replacement plant value. The WBS RPVs are used to estimate a system facility condition index. The facility condition index is the ratio in percent of deferred maintenance cost to replacement plant value. CostWorks currently has 76 models. Additional OSF models for buildings and utility plants can be constructed with CostWorks.

CostWorks exports data directly into CAIS. The site, area, and property ID must be entered in the model developed in CostWorks. Using the File menu and Export feature, users can export model percentage as a CAIS file. The CostWorks model name appears in the model type pick list for the assets. Figure 93 shows the CostWorks Import Option on the Additional menu.

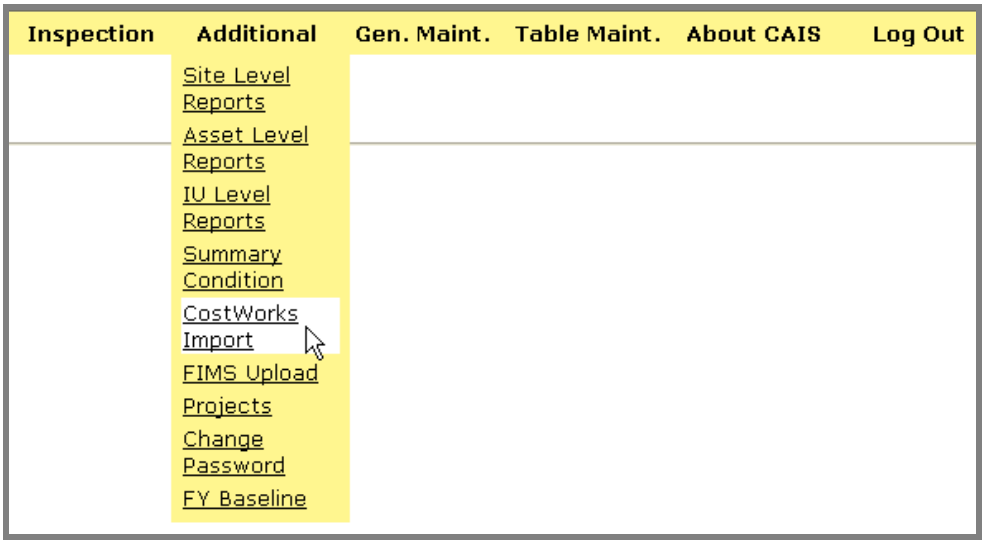


Figure 93 CostWorks Import Option

Figure 94 shows the CostWorks Import screen.

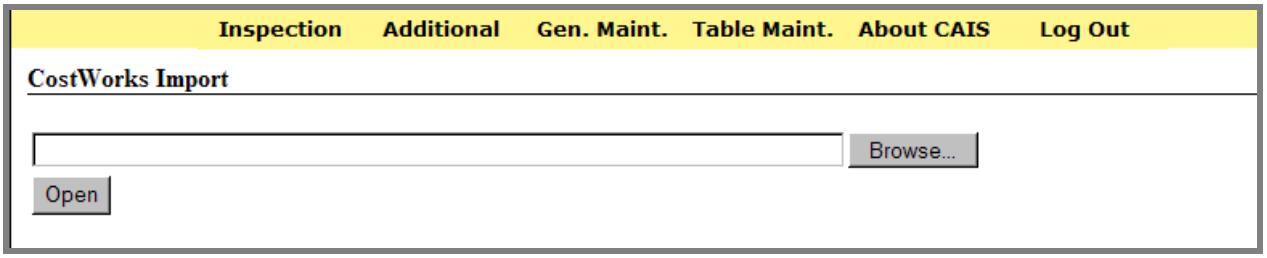


Figure 94 CostWorks Import Screen

In The CostWorks Import Screen, browse in CAIS for the file created. After opening the .cas file created by doing an Export to CAIS from CostWorks. Figure 95 shows the content of the imported file. After reviewing the content of this file, click on SAVE to add the data to the CAIS database.

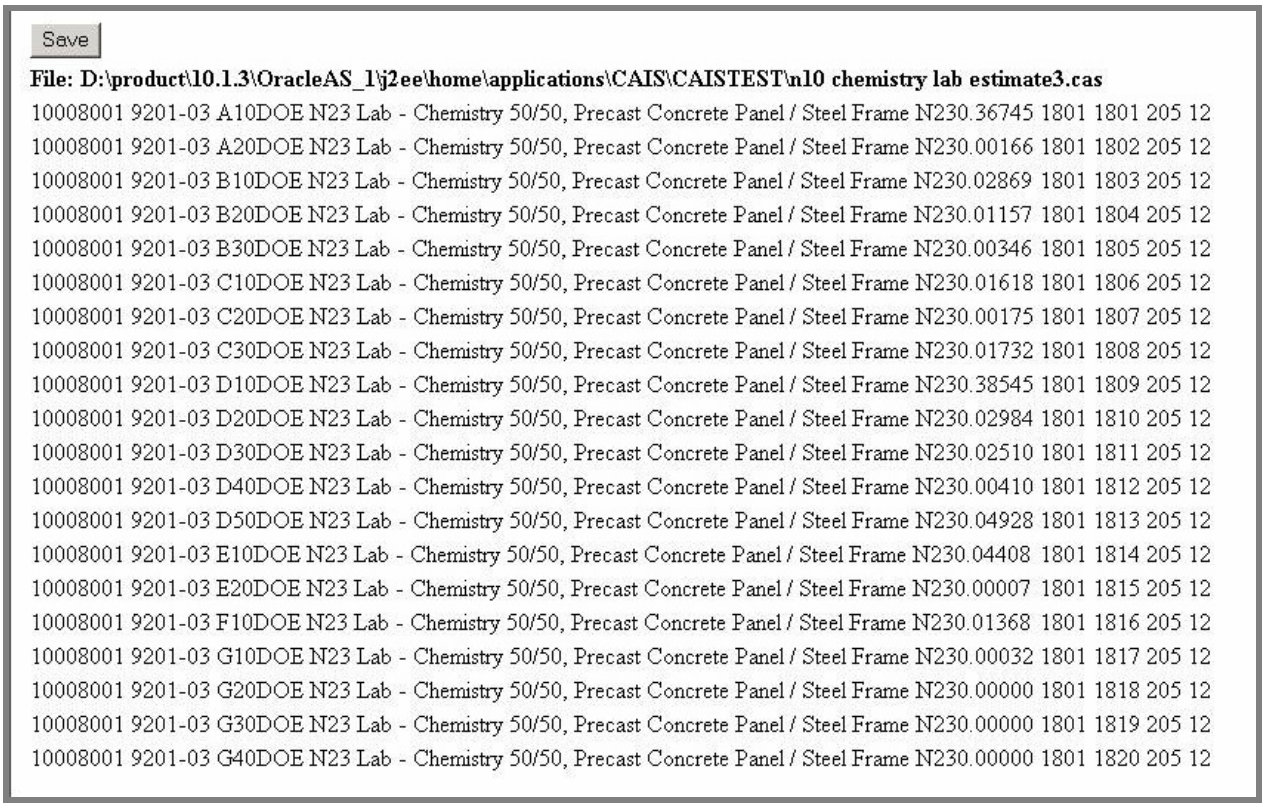
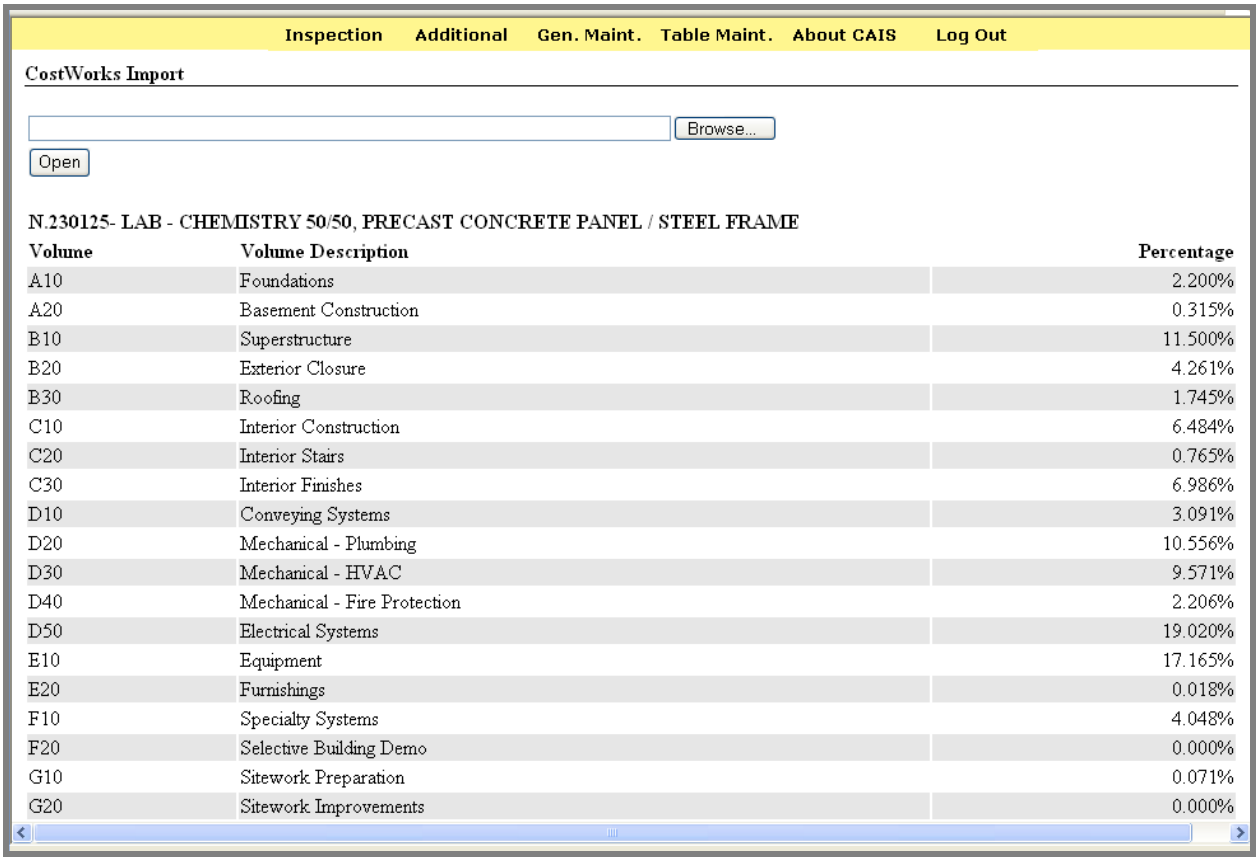


Figure 95 CostWorks File Import

Figure 96 shows the data was successfully entered into the database.



N.230125- LAB - CHEMISTRY 50/50, PRECAST CONCRETE PANEL / STEEL FRAME

Volume	Volume Description	Percentage
A10	Foundations	2.200%
A20	Basement Construction	0.315%
B10	Superstructure	11.500%
B20	Exterior Closure	4.261%
B30	Roofing	1.745%
C10	Interior Construction	6.484%
C20	Interior Stairs	0.765%
C30	Interior Finishes	6.986%
D10	Conveying Systems	3.091%
D20	Mechanical - Plumbing	10.556%
D30	Mechanical - HVAC	9.571%
D40	Mechanical - Fire Protection	2.206%
D50	Electrical Systems	19.020%
E10	Equipment	17.165%
E20	Furnishings	0.018%
F10	Specialty Systems	4.048%
F20	Selective Building Demo	0.000%
G10	Sitework Preparation	0.071%
G20	Sitework Improvements	0.000%

Figure 96 CostWorks Imported Model Type Percentage

If you look at the Summary Condition Report for this asset, the condition codes for each value will show the calculated condition codes based on the percentage from the custom CostWork model you have created.

6.2 CAIS Export to FIMS

The CAIS contractor preloads CAIS/FIMS common field information when CAIS is used initially at a new site.

CAIS exports to FIMS:

- deferred maintenance cost
- rehab and improvement cost (RIC)
- last inspection date
- the five worst building deficiency systems

For a CAIS Administrator to run the FIMS Upload, select the FIMS Upload option from the Additional menu options (Figure 97).

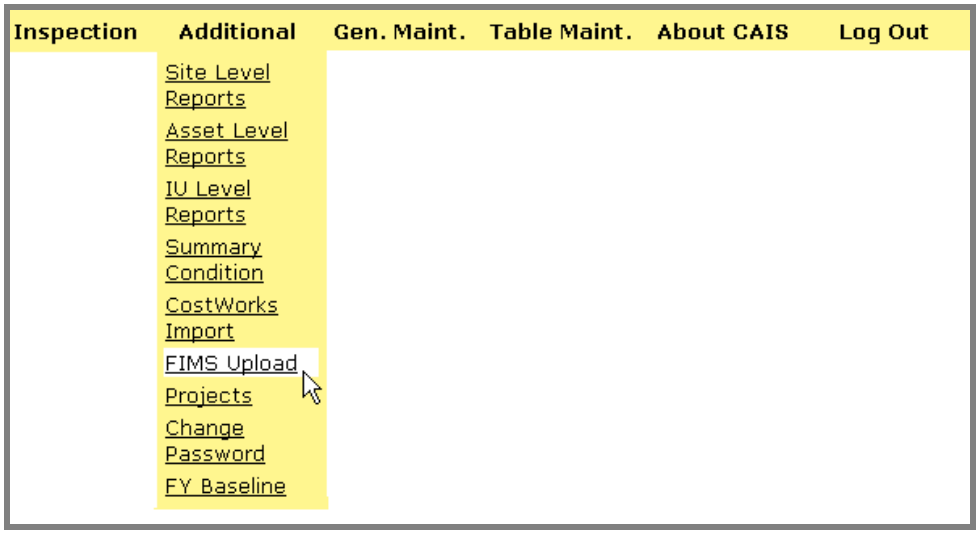


Figure 97 FIMS Upload Option

The FIMS Upload Menu (Figure 98) will then appear.

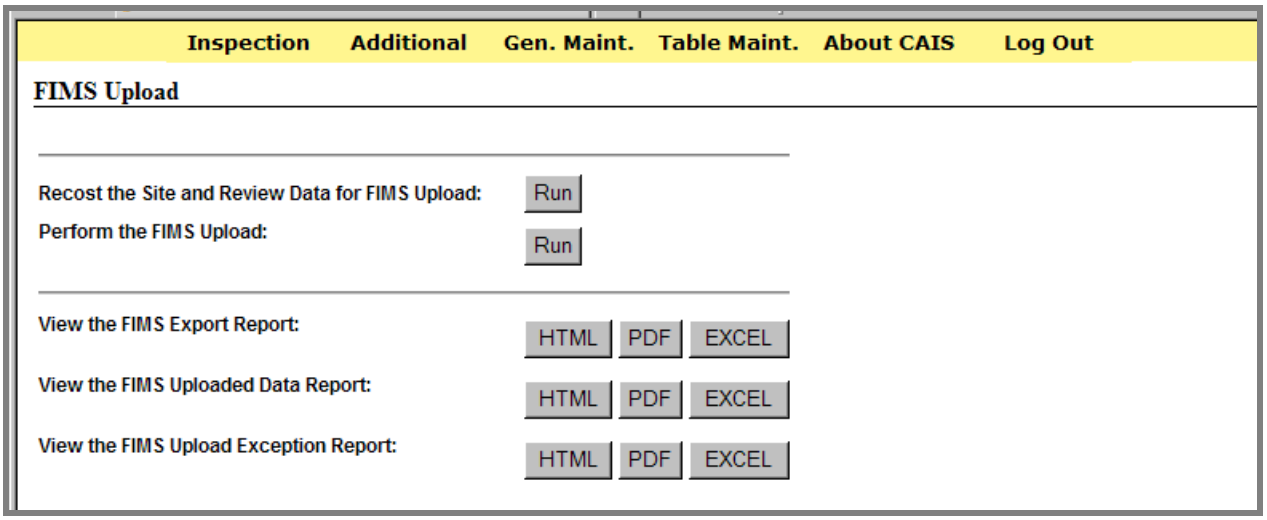


Figure 98 FIMS Upload Menu

The FIMS Upload is a two-step process.

1. When you select Step 1 to run "Recost the Site and Review Data for FIMS Upload, you will receive the message in Figure 99. When you select OK, the FIMS Export Report is run automatically.

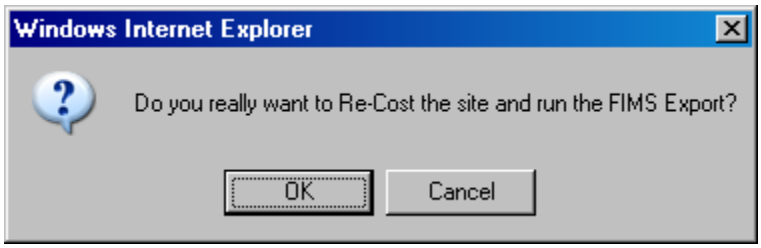


Figure 99 Re-Cost Verification Message

You can also select “View the FIMS Export Report” which is the same report independent of the upload process. This report shows the data in CAIS (Figure 100).

CONDITION ASSESSMENT INFORMATION SYSTEM

FIMS Export Report

NREL NREL-ALL

FIMS Site	FIMS Area	Area ID	Asset ID	Volumes	Def Maint.	Last Insp. Date	RIC Cost
05002	001	5002	0000	G10B20C30	$3,073	08/22/2007	$675,508
05002	001	5002	0001	D20	$500	07/07/2007	$0
05002	001	5002	0002	00	$0		$0
05002	001	5002	0003	00	$0		$0
05002	001	5002	0004	G20	$106,053		$0
05002	001	5002	0101	00	$0		$0
05002	001	5002	0300	00	$0	09/07/2007	$0
05002	001	5002	102	00	$0		$0
05002	001	5002	1802	00	$0	08/18/2003	$0
05002	001	5002	1904	B30D30	$8,145	12/07/2004	$71,349
05002	001	5002	2500	00	$0		$0
05002	001	5002	2501	00	$0		$0
05002	001	5002	2502	00	$0		$0
05002	001	5002	2503	00	$0		$0
05002	001	5002	2505	00	$0		$0
05002	001	5002	4317	00	$0	08/19/2003	$0
05002	001	5002	4515	D40C30D30	$72,008	08/18/2003	$0
05002	001	5002	4516	00	$0		$0
05002	001	5002	4703	00	$0		$0
05002	001	5002	4716	00	$0	08/20/2003	$0
05002	001	5002	5308	D30B30D10D50A20	$1,245,002	08/13/2003	$0
05002	001	5002	5308-01	00	$0		$0
05002	001	5002	5308-02	00	$0		$0
05002	001	5002	5510	00	$0		$0
05002	001	5002	5703	00	$0		$0
05002	001	5002	5704	00	$0		$0
05002	001	5002	5923	D50	$3,836	08/19/2003	$0
05002	001	5002	6306	00	$0		$0

Figure 100 FIMS Export Report (PDF)

2. When you select Step 2 “Perform the FIMS Upload”, you will receive the message in Figure 101. When you select OK, the FIMS Upload Report is automatically generated.

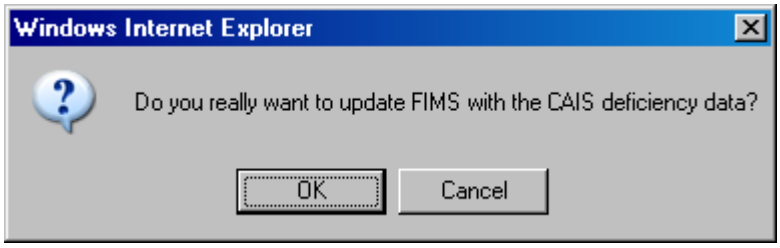


Figure 101 FIMS Upload Verification Message

You can also select "View the FIMS Uploaded Data Report" which is the same report independent of the upload process. This report shows the data in FIMS (Figure 102).

2	CONDITION ASSESSMENT INFORMATION SYSTEM									
3	**FIMS Export Report**									
4	Site		FIMS Sit	FIMS Ar	Area ID	Asset ID	Volume	Def Mair	Last Ins	RIC Cost
5	NREL	NREL-ALL	05002	001	5002	0000889	A10D30	5E+07		0
6	NREL	NREL-ALL	05002	001	5002	0004	D10G20	2E+09	10/11/20	0
7	NREL	NREL-ALL	05002	001	5002	000DDE	00	0	08/18/20	0
8	NREL	NREL-ALL	05002	001	5002	000nnjjjjjj	D50A20	5E+08	12/22/20	2E+06
9	NREL	NREL-ALL	05002	001	5002	0101	D50D20	779854	04/25/20	5258
10	NREL	NREL-ALL	05002	001	5002	0300	D50G40	410877	12/07/20	2E+06
11	NREL	NREL-ALL	05002	001	5002	102	00	0	12/07/20	0
12	NREL	NREL-ALL	05002	001	5002	1802	D50	21337	08/18/20	0
13	NREL	NREL-ALL	05002	001	5002	1904	D10G40	615385	05/01/20	3E+06
14	NREL	NREL-ALL	05002	001	5002	2500	D10B30	1E+08	08/24/20	1E+06
15	NREL	NREL-ALL	05002	001	5002	2501	A20E10	1E+06	08/20/20	23727

Figure 102 FIMS Uploaded Data Report (Excel)

6.2.1 FIMS Upload for System Level Deferred Maintenance

System level deferred maintenance is currently used at INEEL and Hanford. The "Additional" menu is different for INEEL and Hanford than for all other sites. Those two sites see "FIMS Upload for System Level DM," whereas all other sites see "FIMS Upload."

For a CAIS Administrator to run the FIMS Upload for System Level Deferred Maintenance, select this option from the Additional menu options. (See Figure 103.)

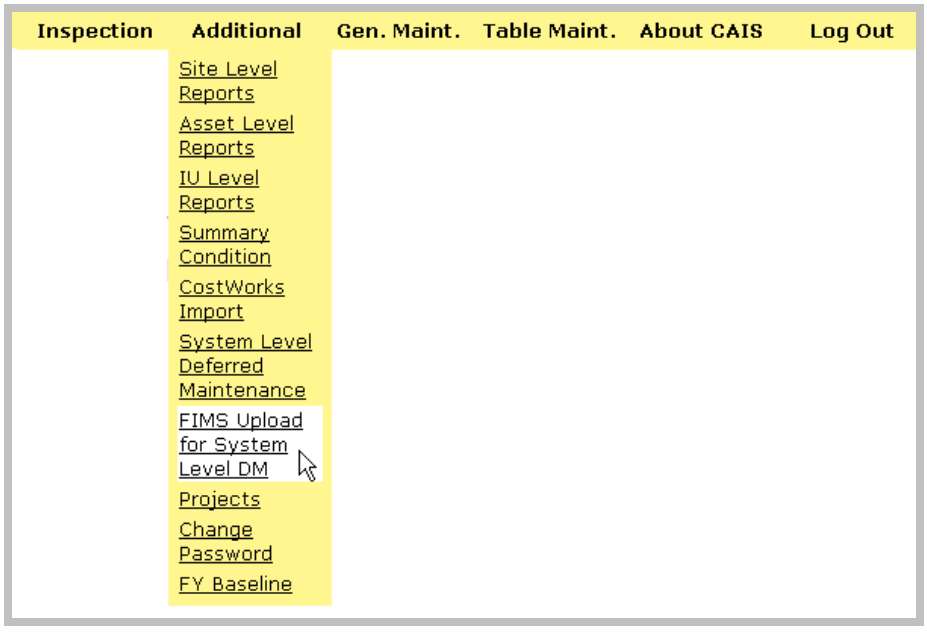


Figure 103 FIMS Upload for System Level DM Option

The steps are the same as FIMS Upload.

The FIMS Upload for System Level DM Menu screen will appear. (See Figure 104.)

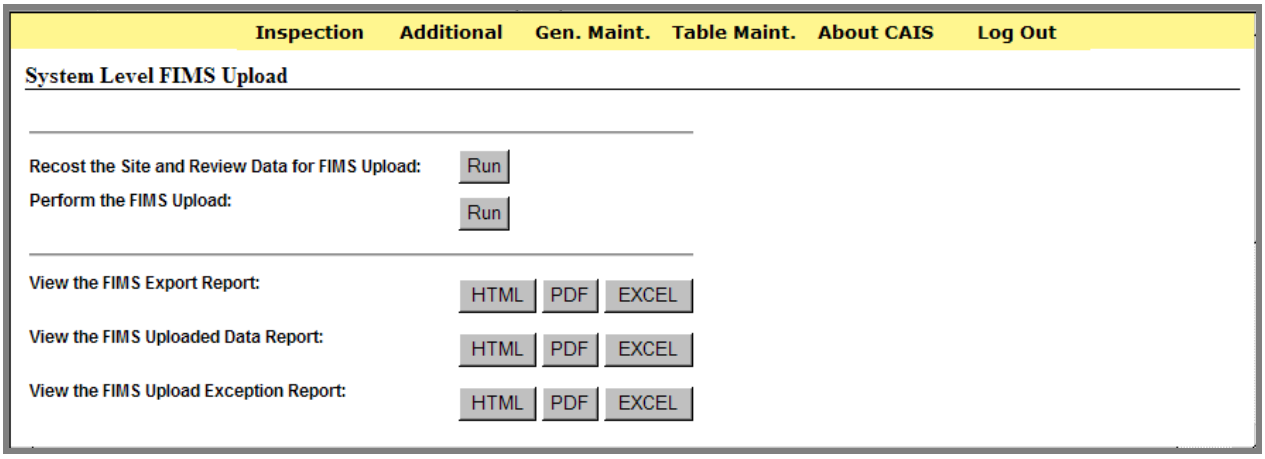


Figure 104 FIMS Upload for System Level DM Menu Screen

The only difference from the regular FIMS Upload is the title at the top of the menu options – System Level FIMS Upload. The process is the same. The difference is that the FIMS Upload for System Level DM pulls data from the System Level DM screen whereas regular FIMS Upload pulls data from Summary Condition data.

7. Maintenance

This section details how the various site, area and asset tables and pick lists are maintained and customized for site use.

There are two menu selections for users to maintain CAIS tables and asset information. The maintenance screens have familiar looks. They have a List screen which displays the information and a Detail screen where edits can be entered and saved.

7.1 General Maintenance

The General Maintenance Menu allows Site (Figure 105), Area, and Asset Maintenance alterations. The General Maintenance Navigation Bar is highlighted. This menu is also discussed in the Section 3.1, Inspection Overview.

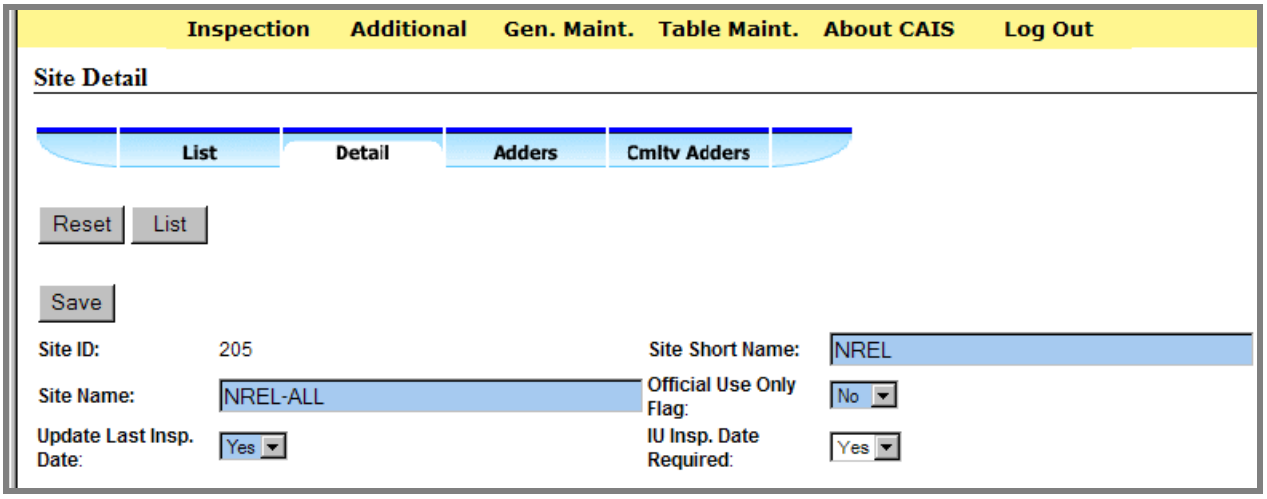


Figure 105 General Maintenance Site Detail Screen

To restrict report dissemination, the "Official Use Only" flag can be set by going to the General Maintenance option on the Menu Bar, selecting Site Maintenance from the dropdown menu and then clicking on Detail. You can then select "Yes" in the dropdown menu for the Official Use Only Flag. This will cause "Official Use Only" to be displayed in the header and footer of any report that is run. When "Last Inspection Date" on the Site Maintenance Detail screen is set to "Yes" the Last Inspection Date Input on the IU Detail Screen will automatically update the Last Inspection Date for the Asset provided that the last inspection date for the IU is more recent than the last inspection date that is already stored for the asset. The last inspection date for the asset is particularly important since this field is part of the FIMS export/upload.

The Asset screen permits a new asset to be added to the list or have its fields edited. The General Maintenance Asset List screen, Figure 106, follows the same format as other asset list screens.

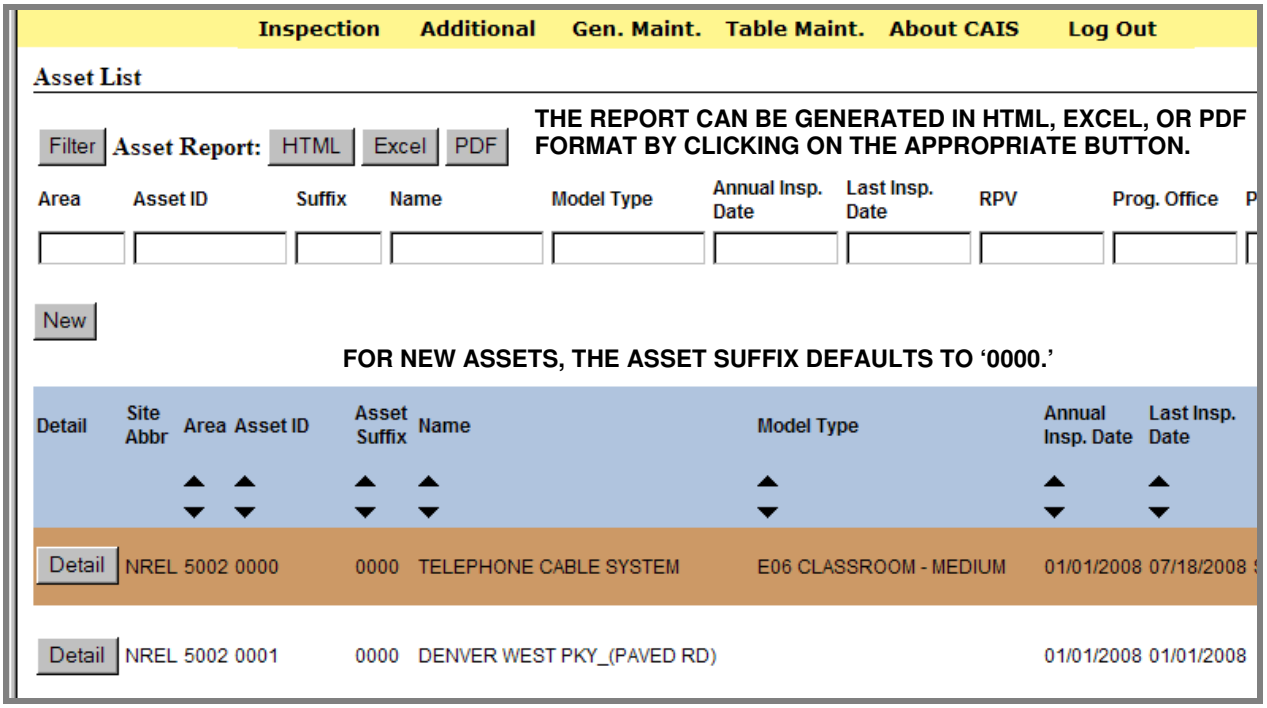


Figure 106 General Maintenance Asset List Screen

The property type and mission dependent program fields are view only FIMS fields. The property type values include B-Building, S-OSF, and T for Trailer.

Click on the Detail tab to open Figure 107, which displays all the property fields associated with this asset. These fields are used for identification, maintenance reporting and estimating features of the database. The Costing button recalculates the Deferred Maintenance cost for the asset.

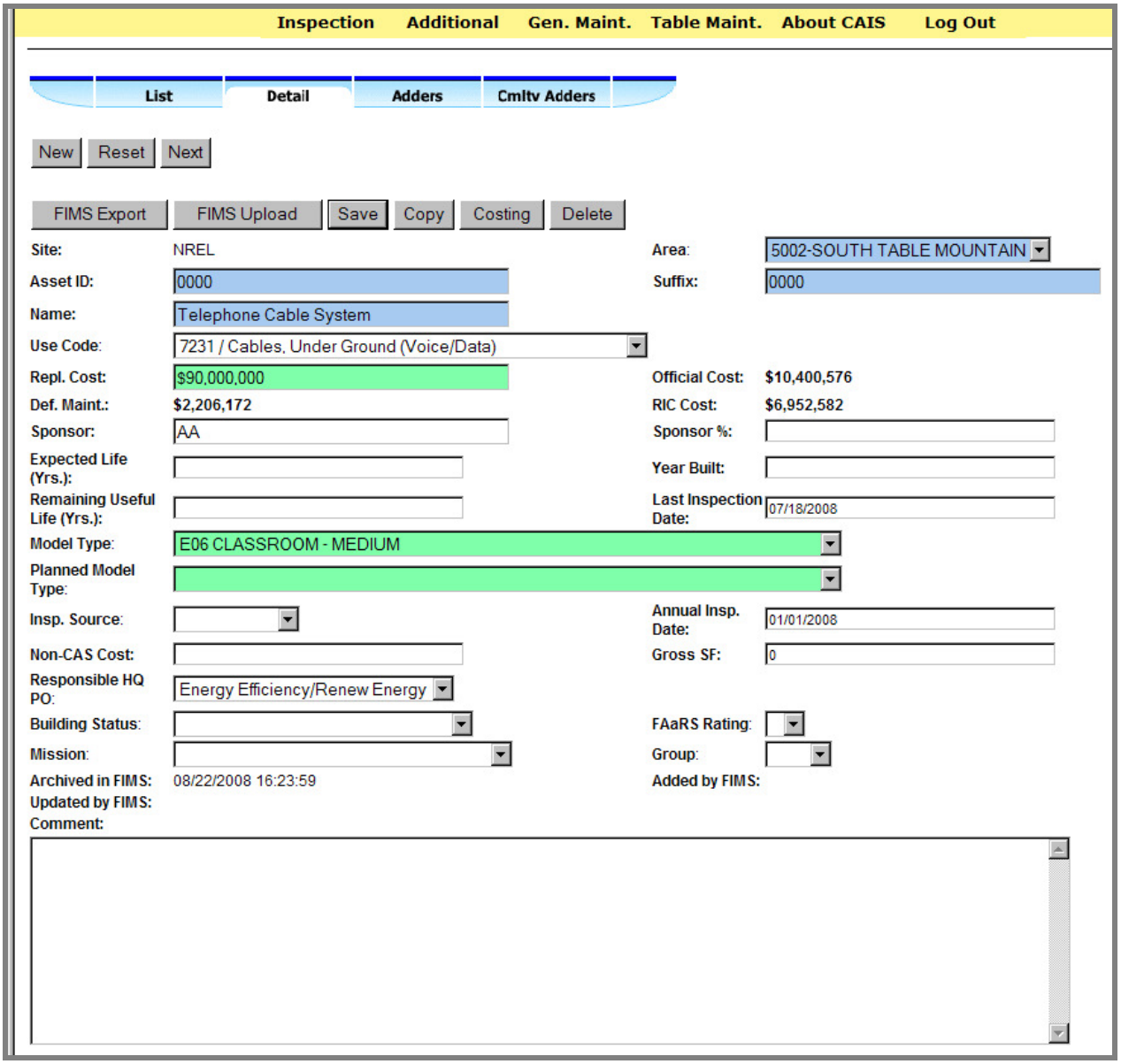


Figure 107 General Maintenance Asset Detail Screen

7.2 Table Maintenance

The Table Maintenance Menu has a long list of tables that can be edited under this menu. See Figure 108.

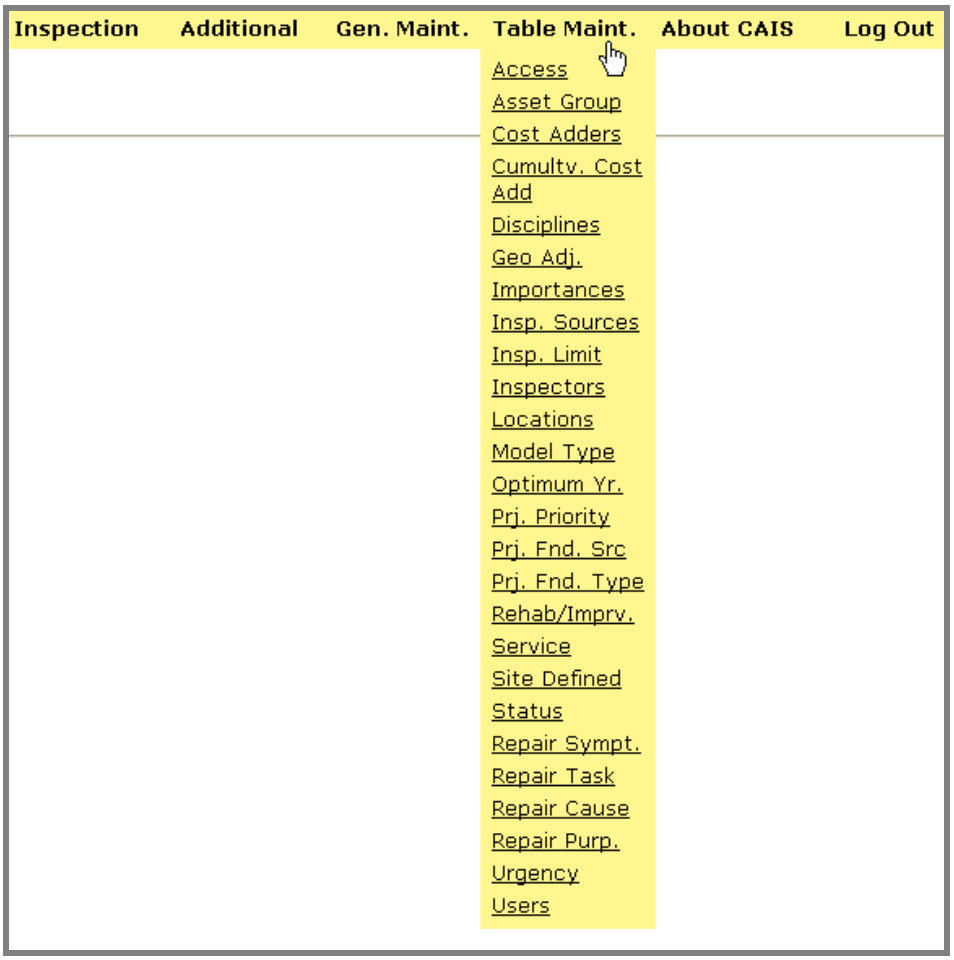


Figure 108 Table Maintenance Selections

This section describes the purpose behind each table and provides screen captures and narrative on any unique table maintenance fields. Code is a common field in the tables. This field can be an abbreviation of the description or term or description within the table lists.

Access – The table contains information on the type of access requirements for each asset. With a myriad of buildings in its complex knowing the levels of access can save inspection preparation time. The list is based on feedback from site users. The Sort Order field is a sorting mechanism. The Code is an abbreviation of the description and the Site Key is the FIMS site number.

Cost Adders – These are cost markups associated with hazardous, security environments and special conditions that add costs to the repair of the deficiencies. These markups are based on equipment, material, labor and overhead elements. See Section 5.2 for the details.

Cumulative Cost Adders – These are cost markups associated with the repair process and are not a function of equipment, material, labor and overhead cost factors. Examples could be escort requirements, testing, special scheduling, and delivery requirements. See Section 5.2 for the screens.

Discipline List – This is the inspector discipline pick-list. The specialties and vocations of your inspection staff are listed in this table.

Geographic Adjusters List – This table is a list of cost adjustments for labor, material, equipment, and overhead at various cities in the United States as a function of geography/location. This table is updated annually. Sites can change these values but be advised that you should have the necessary documentation justifying your location cost adjustments.

Importance List – This is a pick-list of operational status/value designations for each asset. The **Code** field is an abbreviation of the Importance description.

Inspection Source List – This is a list of inspection sources, the year of the version, and version description. This list provides historic information of the initial CAS inspection.

Inspectors List - This is a list of the individuals conducting the condition assessments. The Detail screen provides communication information on each inspector. See Section 3, System Initialization, for more details.

Inspector Estimate List - The estimate limit set by the CAIS administrator that an inspector can estimate a deficiency cost. The default cost is $5,000. See Section 3, System Initialization, for additional information.

Location List - This is a pick-list of common building locations for inspectors to specify the whereabouts of the deficiency. Note one of the locations is Asset Wide.

Model Types List – The list indicates which RS Means Square Foot Model is being used to determine the Model Type Detail volume or system percentages. The building model list can come from FIMS or CostWorks. The CostWorks models include all the FIMS building models and other structure and facilities type assets. CostWorks provides flexibility and accuracy in estimating replacement plant values. The Code indicates the model number. E series are generic RS Means Building models; N series indicate DOE custom designed models. There are currently 121 models in the CostWorks model inventory. Additional models will be added in FY2007. CostWorks model information is exported to CAIS. See the discussion on the **CostWorks Interface** for details.

Model Type Detail – Based on the selected model type, percentages of each volume making up the replacement plant value are calculated. These percentages are used to estimate a replacement plant value for each volume and using the CAIS derived deferred maintenance cost, a facility condition index. Whereas FIMS calculates an asset condition index only CAIS can estimate the facility condition index for each WBS/volume. The CAIS Summary Condition Report provides a very valuable complete picture of asset condition. Select Model Type on the Table Maintenance Menu to open the Model Type List shown in Figure 109.

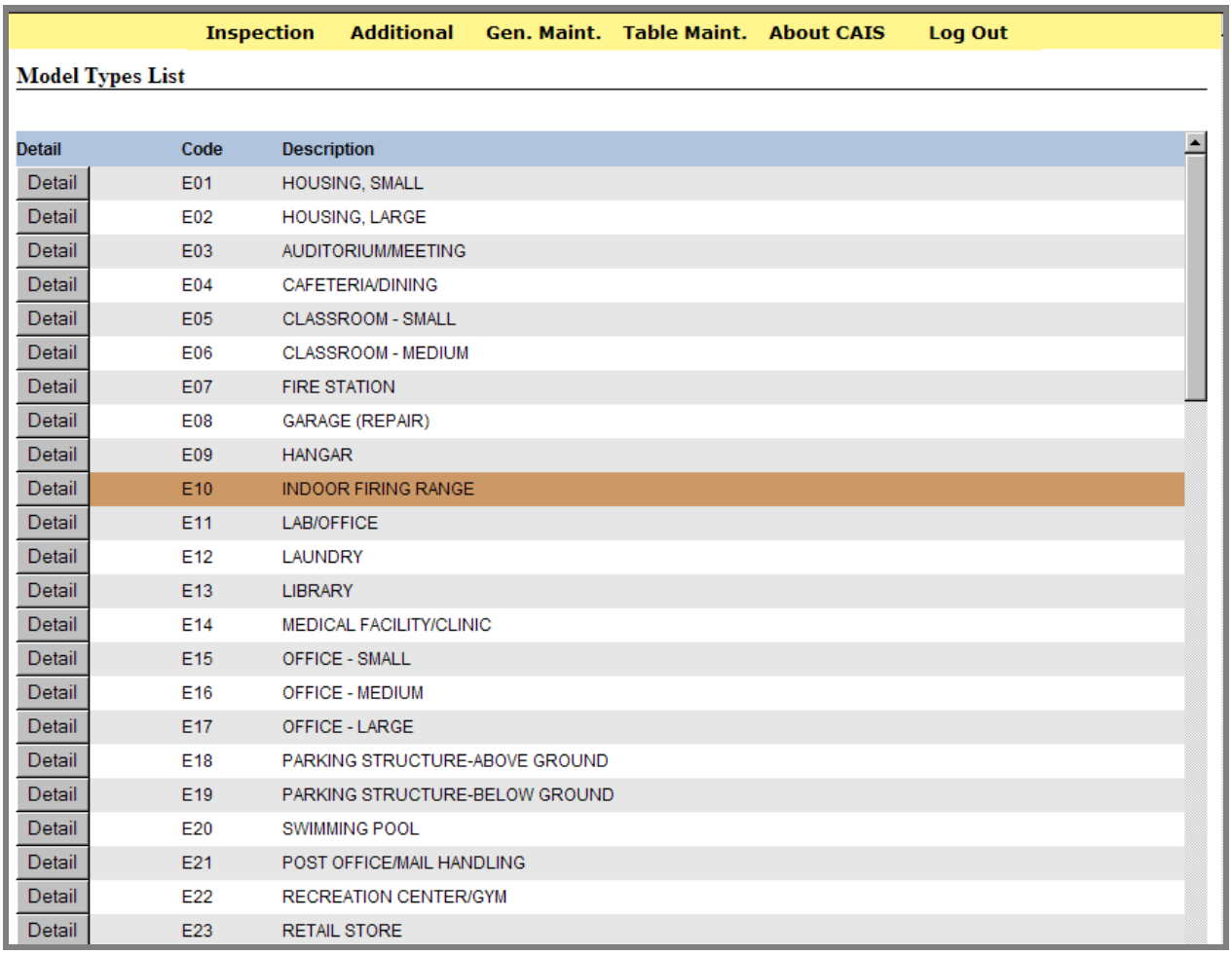
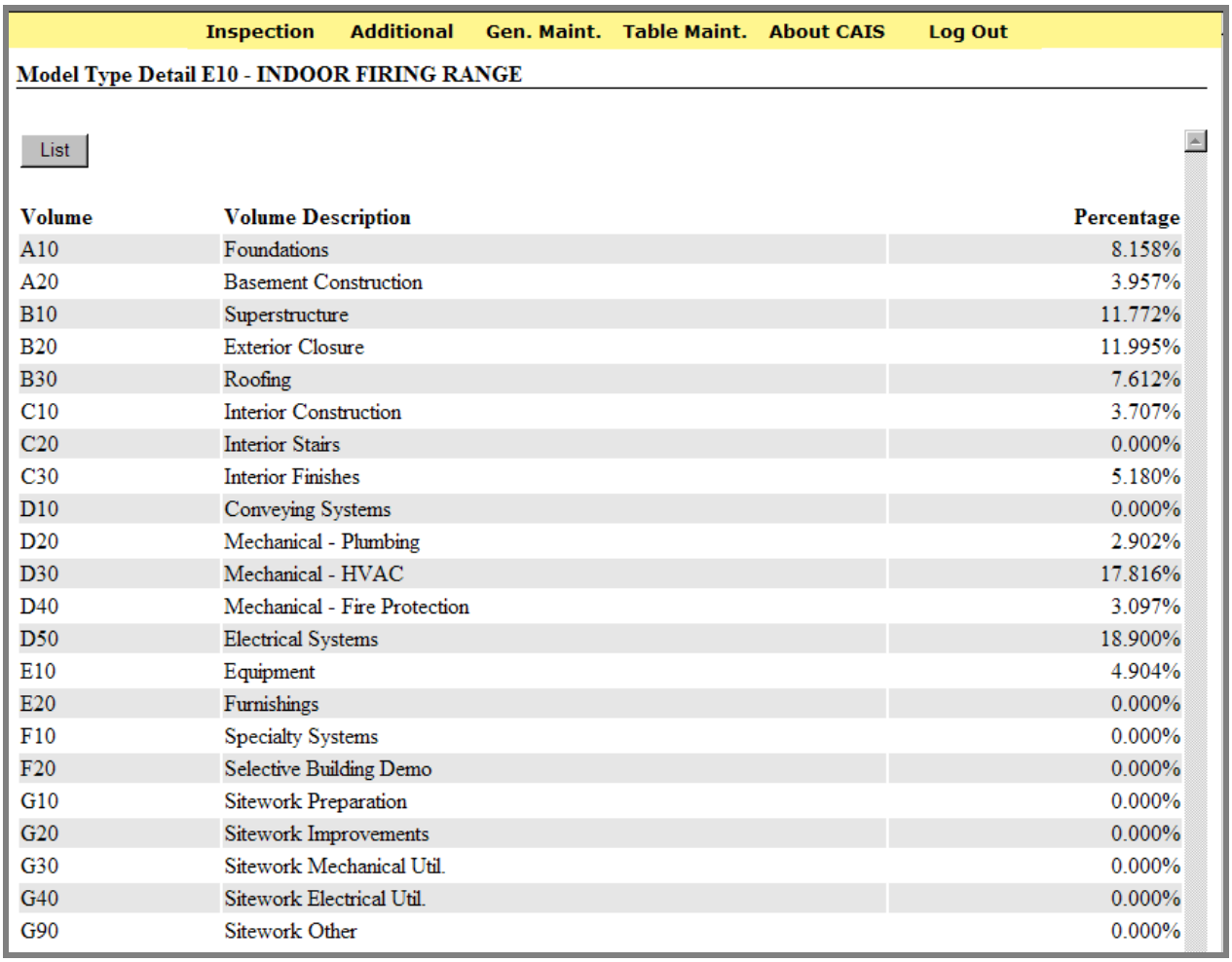


Figure 109 Table Maintenance Model Type List

Click on the Detail button of the desired model type to see its detail window as shown in Figure 110.



Volume	Volume Description	Percentage
A10	Foundations	8.158%
A20	Basement Construction	3.957%
B10	Superstructure	11.772%
B20	Exterior Closure	11.995%
B30	Roofing	7.612%
C10	Interior Construction	3.707%
C20	Interior Stairs	0.000%
C30	Interior Finishes	5.180%
D10	Conveying Systems	0.000%
D20	Mechanical - Plumbing	2.902%
D30	Mechanical - HVAC	17.816%
D40	Mechanical - Fire Protection	3.097%
D50	Electrical Systems	18.900%
E10	Equipment	4.904%
E20	Furnishings	0.000%
F10	Specialty Systems	0.000%
F20	Selective Building Demo	0.000%
G10	Sitework Preparation	0.000%
G20	Sitework Improvements	0.000%
G30	Sitework Mechanical Util.	0.000%
G40	Sitework Electrical Util.	0.000%
G90	Sitework Other	0.000%

Figure 110 Table Maintenance Model Detail

Optimum Year List - This is a list of years in the life cycle of an asset when maintenance actions should be taken to preserve and maximize the usefulness of the asset.

Project Priority List – This is the site priority or importance designation/rating given to a CAIS created project. The list is normally maintained by each program office.

Project Funding Source List – This information lists the source of the project funding. Funding sources are different for each program office. Sites should design this list based on their site and program office requirements.

Project Funding Type List – This is a list of the type of funds to be used for the project. An example could be General Plant Project (GPP), FIRP, and line item project. Code would the common abbreviation of the funding type.

Rehab and Improvement Cost List – This list provides description of the purpose of the rehab and improvement project. Examples are seismic issues, upgrade, code compliance, modernization, etc.

Service List – This is a list of the service requirements of the inspection unit. Does it run continuous, intermittent, used only for emergencies etc?

Site Defined List – This list is designed for the sites to use as they see fit.

Status List – Is a list of the status of the repair and replacement projects or tasks.

Repair Symptom List – Is a description of some common repair symptoms for an inspection unit. Examples are overheating, loud noise, vibration.

Repair Task List – These are common corrective actions that are necessary to repair the inspection unit.

Repair Cause List – This is a list of common causes for the deficiency. Examples are not proper size, abuse, improper maintenance.

Repair Purpose List – Is a list of descriptions or rationale why the repairs are necessary. Examples are code violation, efficiency, repair, safety violation.

Urgency List – Is a list of predefined time periods when the repairs or replacements should be made. This field is used to determine when a deficiency cost becomes a deferred maintenance cost item.

User List – Provides information on who is using the database and what role or rights (Administrative, Regular, or View Only) they have in CAIS. The table is also discussed in Section 3, System Initialization.

8. Special Features/Products

This section deals with the Yearly Cost Update, FY Baseline report and the System Level Deferred Maintenance approach for assessing asset conditions.

8.1 Yearly Costing Update

This function is performed by the CAIS Support Team. The process updates the database with RS Means data for facilities costs, factors for engineering costs, assembly's data, and model information.

The cost data is normally available from RS Means in January of each year. However, DOE has delayed this update to avoid misalignment, confusion and inconsistencies with the Ten Year Site Plan (TYSP) preparation and publication, FIMS and CAIS deferred maintenance costs and facility condition index metrics.

Yearly costing updates will continue to be controlled by DOE Headquarters program offices.

8.2 FY Baseline

This FY Baseline screen, Figure 111, provides the deferred maintenance, rehab and improvement costs or both and the official costs to repair or replace the deficiencies of an inspection unit (IU) A report can be generated by using the File/Print commands.

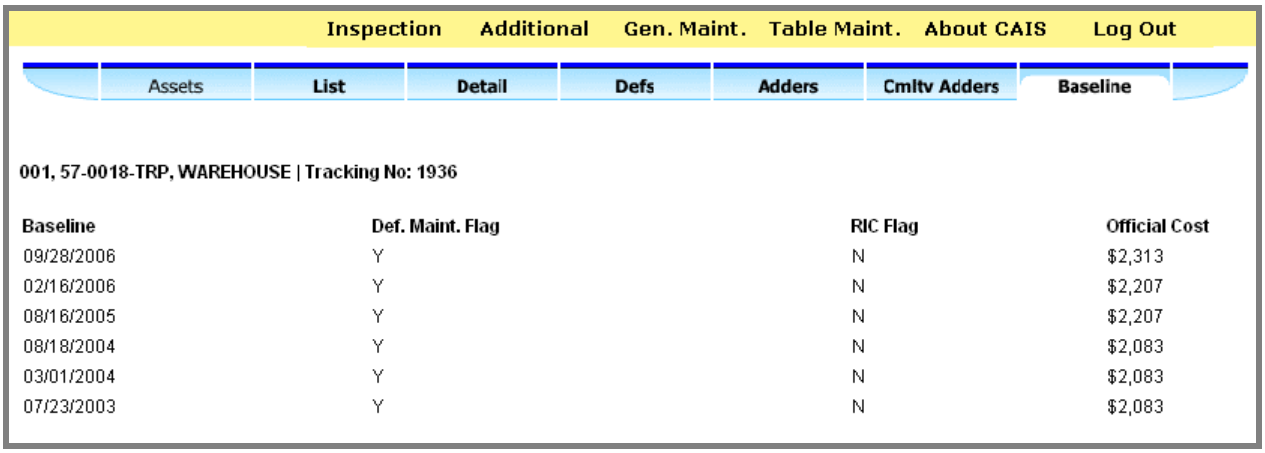


Figure 111 FY Baseline Screen

NNSA sites have a requirement to save snapshots of the deferred maintenance (DM) costs for each fiscal year. They also need to report on the buy-down of the DM for future years.

To create the FY Baseline, select FY Baseline from the Additional Menu shown in Figure 112.

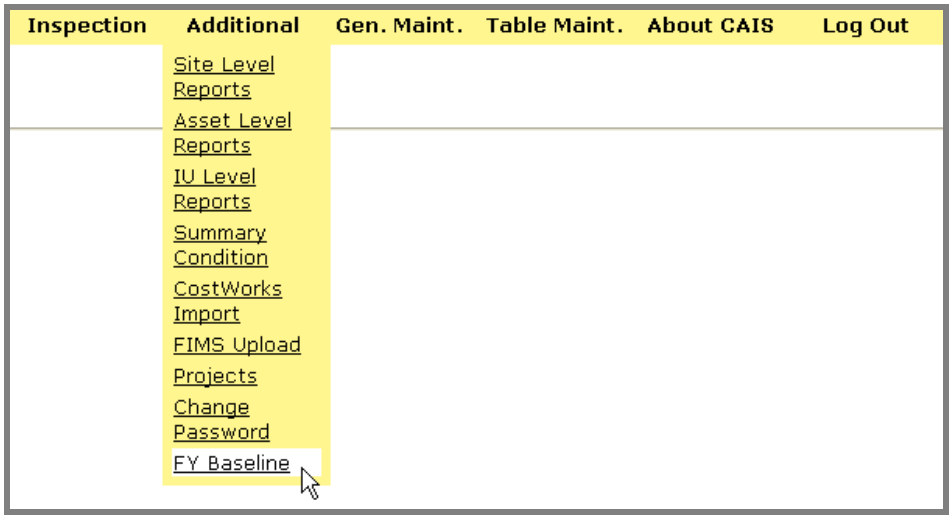


Figure 112 FY Baseline Option

The Create FY Baseline Screen will appear (Figure 113).

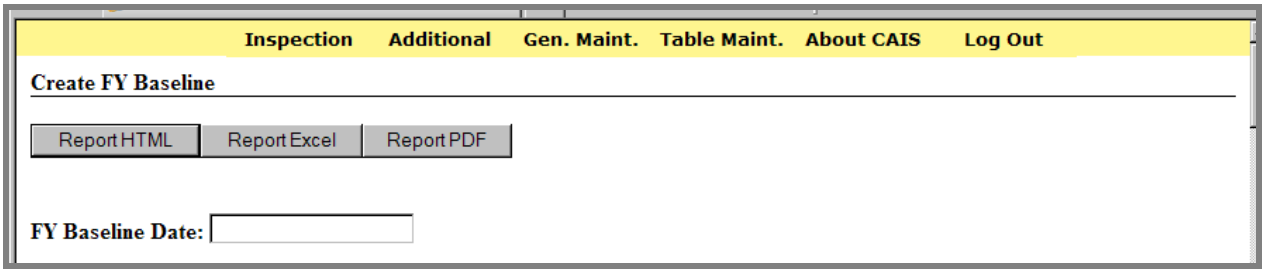


Figure 113 Create FY Baseline Screen

Enter the FY Baseline Date and select your desired report format. The year must be four digits or you will be prompted with the message shown in Figure 114.

Figure 114 4 Digit Year Requirement Message

You will be prompted whether you really want to create a permanent FY Baseline (Figure 115).

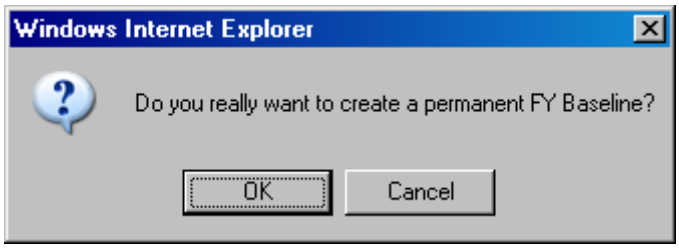


Figure 115 Verify You Want to Create a Permanent FY Baseline

Click on OK. The report will be produced.

Check the Report Section for samples of the FY Buydown Report.

8.3 System Level Deferred Maintenance

System Level Deferred Maintenance is a condition assessment approach some sites have used where maintenance budgets prevent detailed inspections; the site has many environmental issues; or the assets may be closed or shutdown in the future but are still in operation and possibly only safety and health deficiencies are important. System level deferred maintenance is currently used at INEEL and Hanford. Figure 116 illustrates the screen that appears after login.

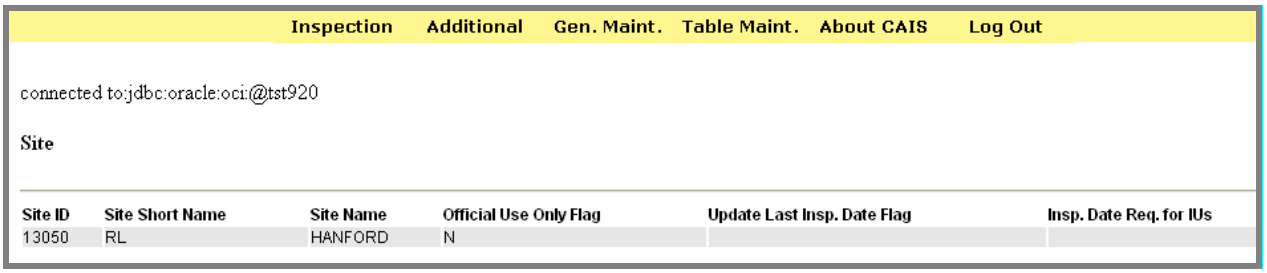


Figure 116 System Level Deferred Maintenance Site Screen

For those sites with access to the System Level Deferred Maintenance tool, the option is available under the Additional dropdown menu, Figure 117.

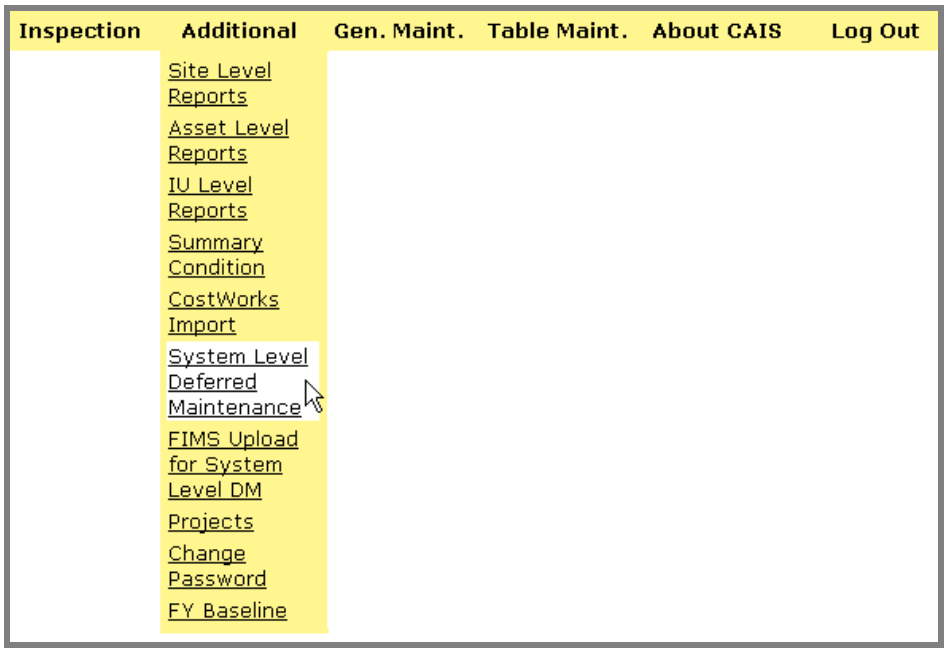


Figure 117 System Level Deferred Maintenance Selection Window

When the System Level Deferred Maintenance option is selected, the System Level Deferred Maintenance Asset List screen appears (see Figure 118).

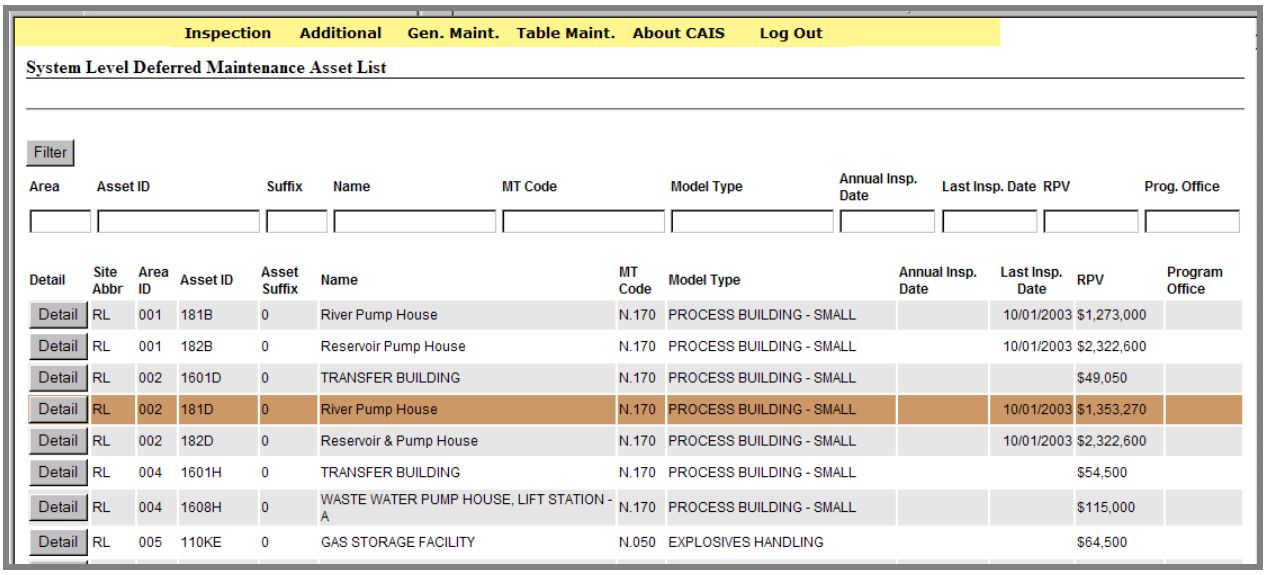
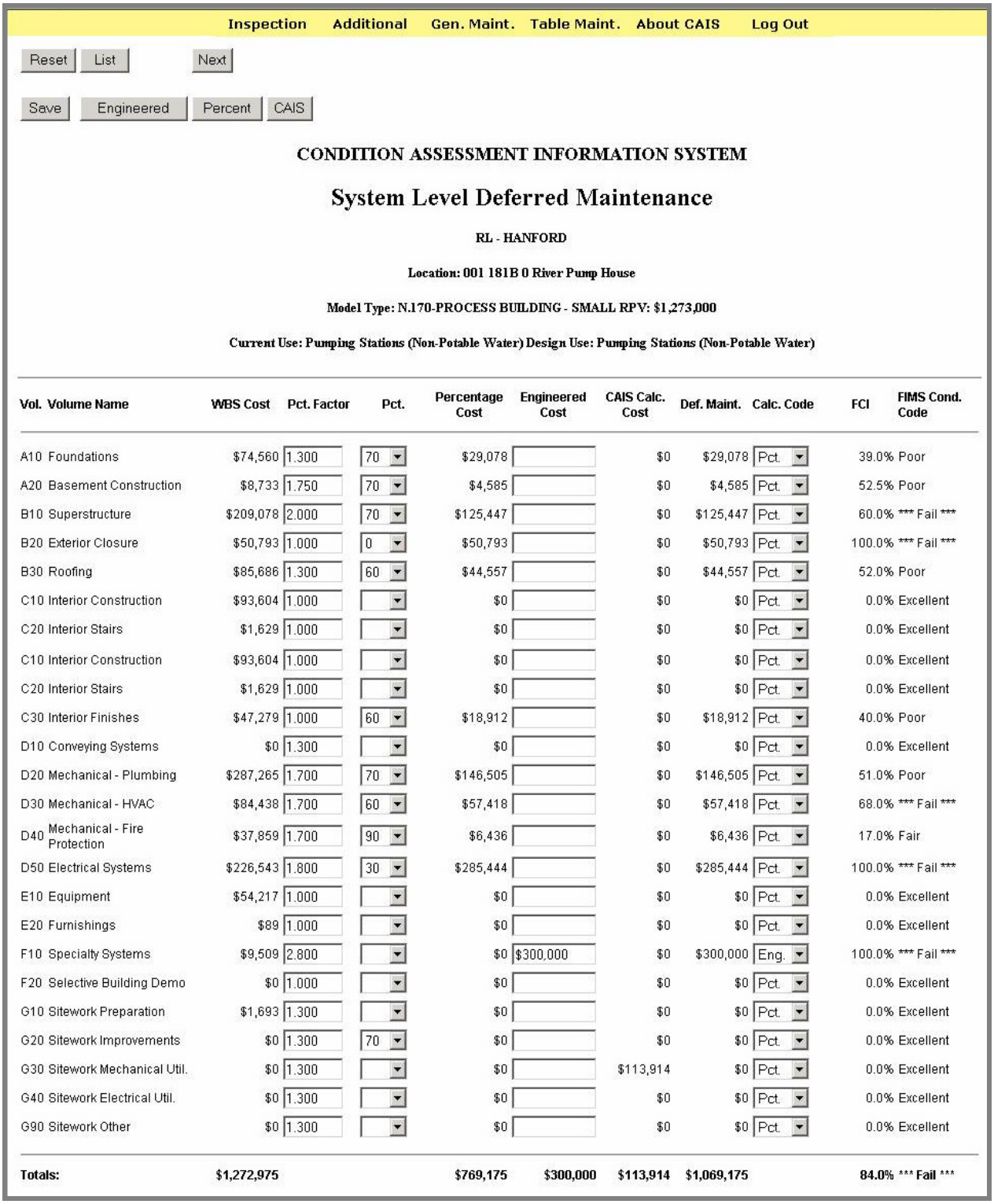


Figure 118 System Level Deferred Maintenance Asset List Window

Selecting the **Detail** option opens the specific asset detail information displayed in Figure 119.



Inspection Additional Gen. Maint. Table Maint. About CAIS Log Out

Reset List Next

Save Engineered Percent CAIS

CONDITION ASSESSMENT INFORMATION SYSTEM

System Level Deferred Maintenance

RL - HANFORD

Location: 001 181B 0 River Pump House

Model Type: N.170-PROCESS BUILDING - SMALL RPV: $1,273,000

Current Use: Pumping Stations (Non-Potable Water) Design Use: Pumping Stations (Non-Potable Water)

Vol.	Volume Name	WBS Cost	Pct. Factor	Pct.	Percentage Cost	Engineered Cost	CAIS Calc. Cost	Def. Maint.	Calc. Code	FCI	FIMS Cond. Code
A10	Foundations	$74,560	1.300	70	$29,078		$0	$29,078	Pct.	39.0%	Poor
A20	Basement Construction	$8,733	1.750	70	$4,585		$0	$4,585	Pct.	52.5%	Poor
B10	Superstructure	$209,078	2.000	70	$125,447		$0	$125,447	Pct.	60.0%	*** Fail ***
B20	Exterior Closure	$50,793	1.000	0	$50,793		$0	$50,793	Pct.	100.0%	*** Fail ***
B30	Roofing	$85,686	1.300	60	$44,557		$0	$44,557	Pct.	52.0%	Poor
C10	Interior Construction	$93,604	1.000		$0		$0	$0	Pct.	0.0%	Excellent
C20	Interior Stairs	$1,629	1.000		$0		$0	$0	Pct.	0.0%	Excellent
C10	Interior Construction	$93,604	1.000		$0		$0	$0	Pct.	0.0%	Excellent
C20	Interior Stairs	$1,629	1.000		$0		$0	$0	Pct.	0.0%	Excellent
C30	Interior Finishes	$47,279	1.000	60	$18,912		$0	$18,912	Pct.	40.0%	Poor
D10	Conveying Systems	$0	1.300		$0		$0	$0	Pct.	0.0%	Excellent
D20	Mechanical - Plumbing	$287,265	1.700	70	$146,505		$0	$146,505	Pct.	51.0%	Poor
D30	Mechanical - HVAC	$84,438	1.700	60	$57,418		$0	$57,418	Pct.	68.0%	*** Fail ***
D40	Mechanical - Fire Protection	$37,859	1.700	90	$6,436		$0	$6,436	Pct.	17.0%	Fair
D50	Electrical Systems	$226,543	1.800	30	$285,444		$0	$285,444	Pct.	100.0%	*** Fail ***
E10	Equipment	$54,217	1.000		$0		$0	$0	Pct.	0.0%	Excellent
E20	Furnishings	$89	1.000		$0		$0	$0	Pct.	0.0%	Excellent
F10	Specialty Systems	$9,509	2.800		$0	$300,000	$0	$300,000	Eng.	100.0%	*** Fail ***
F20	Selective Building Demo	$0	1.000		$0		$0	$0	Pct.	0.0%	Excellent
G10	Sitework Preparation	$1,693	1.300		$0		$0	$0	Pct.	0.0%	Excellent
G20	Sitework Improvements	$0	1.300	70	$0		$0	$0	Pct.	0.0%	Excellent
G30	Sitework Mechanical Util.	$0	1.300		$0		$113,914	$0	Pct.	0.0%	Excellent
G40	Sitework Electrical Util.	$0	1.300		$0		$0	$0	Pct.	0.0%	Excellent
G90	Sitework Other	$0	1.300		$0		$0	$0	Pct.	0.0%	Excellent
Totals:		**$1,272,975**			**$769,175**	**$300,000**	**$113,914**	**$1,069,175**		**84.0%**	*** Fail ***

Figure 119 System Level Deferred Maintenance Detail

The buttons at the top of the Detail Screen are used for the following:

List – goes back to the list of assets

Reset - – Clicking this button erases all data fields, allowing you to go back to the original retrieved detail information after you have made changes which you decided you didn't want to save. This can only be done before you select save. Removes data you entered in the filtering fields

Next – go to the next asset detail

Save – Saves any changes you made

Engineered – Flips all Calc. Code flags to Eng

Percent - Flips all Calc. Code flags to PCT

CAIS - Flips all Calc. Code flags to CAIS

To estimate deferred maintenance the user has several options:

a. The user enters a cost adjustment factor or markup Percentage (Pct) Factor similar to a Site Factor, and a Percentage (Pct), an Asset Condition Index (ACI), for the entire WBS. The Percentage Cost is calculated based on this information or enter;

b. An Engineered Cost derived from an estimate prepared by site engineering or estimator staffs or a consultant;

c. Or the normal CAIS estimated IU cost (CAIS Calc).

The Deferred Maintenance cost is estimated based on any of these costs if the Calc Code matches the designated cost for each WBS. The Calc Code determines what should be included in Deferred Maintenance. The Calc Code or Deferred Maintenance cost source has three choices: Engineered (ENG), Percentage Cost (PCT) or a CAIS estimated cost (CAIS).

Totals are calculated for each type of cost. The FCI is based on the total Deferred Maintenance divided by the replacement plant value of the entire WBS.

Click Save and the FCI and FIMS Condition Codes are calculated within the report on a WBS basis.

The Engineered, Percent, and CAIS buttons when activated reset all the Calc Code values.

The screen can be printed using the normal File/Print commands.

Table 5 - Fields for System Level Deferred Maintenance

Field Name	Description
CAIS Calc Cost	CAIS developed Deferred Maintenance Cost.
Calc Code	The list options tell the user what is the source of the deferred maintenance cost. The choices are Engineered (ENG.), Percent (PCT), and CAIS Calc Cost (CAIS). Only one choice can be selected.
Deferred Maintenance	Defined in Federal Financial Statement #6, as "maintenance that was not performed when it should have been or was scheduled to be and which, therefore is put off or delayed for a future period".
Engineered Cost	Def. Maint cost developed by in-house or contractor engineering personal.
FCI	The facility condition index (FCI) is the ratio in percent of Deferred Maintenance cost to the WBS cost.
FIMS Cond. Code	CAIS and FIMS use the same condition ratings. The basis of the ratings is the FIMS Summary Condition field sponsored by the Office of Science. The ratings are excellent, good, adequate, fair, and poor and fail.
Pct.	This is the RPAM Asset Condition Index. ACI= (1 – FCI).
Pct. Factor	A cost adjustment factor or markup percentage similar to the Site Factor.
Percentage Cost	This cost is the product of the (WBS Cost x Pct. Factor x Pct)
VOL. Volume Name	This is the CAS Work Breakdown Structure Uniformat II volume number and name.
WBS Cost	This is a shorter reference to the above Vol, Volume Name.

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Appendix A DOE Facility Management Terminology

Database Field/Operation	Description	Association
Access	A list that define the access requirements for the IU.	CAIS - Documenting Deficiencies;
Annual Actual Maintenance	The actual, burdened costs incurred in the current fiscal year of all maintenance activities for a building, real property trailer, or OSF (including repairs and those activities accomplished in the current fiscal year). Do not include the maintenance costs of programmatic equipment and programmatic real property. Data entry in FIMS is required annually. (FIMS Definition)	FIMS
Annual Required Maintenance	Estimates of all costs to perform maintenance activities for a building, real property trailer, or OSF in the current fiscal year that one would normally expect to be accomplished as determined by engineering/maintenance/life cycle analysis and vendor maintenance schedules. Included are preventive maintenance, predictive maintenance, corrective maintenance, and any other maintenance/repair activity required for which the current fiscal year is the optimum period of accomplishment. Maintenance costs should, in as much as practical, reflect the anticipated cost of the maintenance action. I.e., they should reflect the local prevailing wage rates and cost burdens as well as other related work necessary to resolve the deficiency. Do not include maintenance requirements that were identified in the previous fiscal year deferred maintenance estimate unless they are reprogrammed for accomplishment in the current fiscal year and are not going to be deferred to next fiscal year or beyond. Maintenance costs of programmatic equipment and programmatic real property are not to be included. Sustainment costs = annual required maintenance.	CostWorks - Sustainment Cost; RS Means FM&R Costbook
Area	Is a name that is assigned by the Field Office to identify an administrative subdivision of a Site. An Area is identified by a three-digit number. (FIMS Definition)	CAIS, CostWorks identification field
Assembly Cost	This is a RS Means costing term that describes a grouping of several trades into building components or broad building elements. The CostWorks Assembly Costs screen gives users access to assembly costs for thousands of these grouped elements. CAIS uses over 20,000 assemblies in their costing tools.	CAIS - Costing; CostWorks - RPV Sq.Ft. Models, Sustainment Calculator
Asset	In FIMS, real and related personal property are represented by four major property types. They include Buildings (real), Other Structures and Facilities (real), Land (real) and Trailers/Modular Containers (personal, sometimes real). CAS inspections are conducted on only real property.	CAIS – User Guide, Four Basic Steps of Data Collection

Database Field/Operation	Description	Association
Asset Condition Index	The asset condition index (ACI) is DOE's corporate performance measure of facility condition. The goal is for the ACI to approach 1. The index is 1 minus the facility condition index (FCI). Ratings are assigned to ACI ranges similar to the FCI ratings of Excellent, Good, Adequate, Fair, Poor.	CAIS - Facility Condition Index; RPAM Order; DOE OECM DM reporting guidance.
Asset Determinant Factor	This term is found in the CAS manuals and is used to establish possible levels of CAS inspections and the managers role in determining the type survey appropriate for each asset. (CAS Manuals) There are 10 asset determinant levels.	CostWorks graded approach; CAS inspection planning.
Asset Level Reports	These reports contain assessment information for an individual asset.	CAIS Reports
Asset or Property ID	Is a unique control number assigned to a property. (FIMS)	CAIS, CostWorks property identifier
Base Cost	This is a locked field that shows the base cost to repair or replace the IU identified based on the information entered. Base costs do not include any cost adders.	CAIS - Documenting Deficiencies
Base Deficiency Cost	The cost of the deficiencies found for each WBS excluding cost adders.	CAIS - Summary Condition Report
Betterments	Capitalized improvements to facilities that result in better quality work, increased capacity, and /or extended useful life as required to accommodate regulatory and other changes to requirements. Determining when and to what extend expenditure should be treated as betterment requires judgment. The proper basis for determining whether or not betterment is effected is when the effect of the replacement is related to each unit when a minor item is replaced in each of a number of similar units, rather than to the cumulative costs. Betterments can be new construction conversions that change the functional purpose of the facility and major renovations and replacements.	Annual Deferred Maintenance Call Guidance
Building RPV	Is the current cost to replace an existing building with a new building. This value does not include the cost of the underlying land, personal property (furnishings) within the building site work; D&D cost, demolition, contamination and any production equipment. RPV is dependent on a standardized building model base on RS Means CostWorks square foot buildings models. (FIMS)	CAIS - Summary Reports; CostWorks - RPV estimates
Building Status	Is the status of the building that reflects programmatic intentions as well as the physical/operational status of the building. (FIMS)	CAIS – Asset Screen

Database Field/Operation	Description	Association
Burden Cost	Site burden represents the application of the site's overhead rates to RPV modeling, in house maintenance costs, and sustainment. Sites apply this rate in various ways. See FIMS, Attachment F, RPV Guidance for assistance.	FIMS –RPV Estimating, Annual Required Maint. Cost; CostWorks – Sustainment Calculator
CAIS	This is the Department of Energy's condition assessment information system (CAIS) database. The database is the basis for the RPAM, Attachment 5, Table 1 "Characteristics of a National Cost Estimating System." The database accommodates site craft, engineering service contractor, or other data entry. The database breaks out deferred maintenance cost by asset components or systems; calculates a facility condition index by system and separates rehab and improvement costs from deficiency costs.	CAIS User Guide; Deferred Maintenance and FCI reporting source.
CAIS Administrator	Is the central point of contact for the operation and maintenance of the CAS/CAIS program who manages the day to day operations of the CAS/CAIS. Their role includes report creation and editing, inspection scheduling and quality control, ensuring data calls are met, ensuring the inspection staff consists of the appropriate discipline and staff level, and validating inspection data sheets.	CAIS - User Roles
CAIS Calc Cost	CAIS developed Deferred Maintenance Cost.	CAIS - System Level Def. Maint.
Calc Code	The list options tell the user what is the source of the deferred maintenance cost. The choices are Engineered (ENG.), Percent (PCT), and CAIS Calc Cost (CAIS). Only one choice can be selected.	CAIS - System Level Def. Maint.
CAS	The Department of Energy's condition assessment survey (CAS) program developed in the early 1990's. The program's design provides the condition of your assets/facilities and how much it will cost to repair them. The program encompasses inspections, costing, reporting, project formulation, interfaces with RS Means CostWorks and FIMS databases. CAS is the whole assessment "enchilada" and was mentioned in the CAMP and RPAM orders.	CAIS; CAS Manuals; Inspection Training Programs
CAS WBS	The Work breakdown Structure is the list of the DOE condition assessment building systems/components that are being inspected.	CAIS - Summary Condition Report
Code	A pick list selection of the available deficiencies related to the IU selected.	CAIS - Deficiency Field
Comment	A free form field for the user to enter additional descriptive data related to inspection information.	CAIS - Documenting Deficiencies, Deficiency Field

Database Field/Operation	Description	Association
Completed (Complt) Cost (Cst)	Actual cost to complete the repairs, replacement of the deficiency.	CAIS - Documenting Deficiencies
Completion Yr.	The year the work was actually was performed.	CAIS - Documenting Deficiencies
Component	A subdivision of the WBS that provides increasing detail. For example, the components of a roof's "BUILT-UP MEMBRANE" WBS might include "FLASHING", "MEMBRANE", or "INSULATION". CAIS supports the recording of deficiencies at the component level (for example, *torn* FLASHING, *punctured* MEMBRANE.). It can be a pick list selection based on the WBS selected. The component defines major system or assemblies of the selected WBS.	CAIS - Four Basic Steps of Data Collection, Inspection Unit, Documenting Deficiencies
Condition	A list that identifies the general shape of the IU under inspection.	CAIS - Documenting Deficiencies
Corrective Maintenance	The repair or restoration of failed or malfunctioning equipment, systems, r facilities to their intended functions or design conditions. It does not result in a significant extension of the expected useful life.	Annual Deferred Maintenance Call Guidance
CostWorks (CW)	CostWorks is RS Means Windows based database that provides access to the 13 RS Means electronic cost titles for cost estimating tasks. DOE uses CostWorks Sq. Ft models features to develop replacement plant values (RPV) for all assets and asset WBS/components. CostWorks uses 35 RS Means standard models, 34 custom DOE models, 7 OSF plant models and 51 OSF models to accurately estimate RPV. RPV is a key element in calculating FCI and ACI. ACI is a DOE asset management performance metric.	CAIS - Summary Reports, FCI calculations; FIMS RPV estimating, Annual Required Maintenance Cost; Ten Year Site Plan
RS Means Facilities Construction Cost Data	This is RS Means Unit Price book. It contains over 40,000 unit price items. These prices are not assembly costs.	CAIS – Costing; CostWorks – RPV Model customization
Coverage %	Under the coverage field are four degrees of severity (Light, Moderate, Severe, and Fail). The Inspector indicates the percentage of coverage for the selected deficiency under the appropriate severity. Each deficiency can not exceed 100% coverage. Multiple deficiencies are possible.	CAIS - Deficiency Field
Creation Date	A system generated field that logs the date and time of IU creation.	CAIS - Documenting Deficiencies

Database Field/Operation	Description	Association
Deactivation	Placing a facility in a stable and known condition including the removal of hazardous and radioactive materials to ensure adequate protection of workers, public health and safety, and the environment, thereby limiting the long-term cost of surveillance and maintenance. Actions include the removal of fuel, draining and/or de-energizing nonessential systems, removal of stored radioactive and hazardous materials, and related actions. Deactivation does not include all decontamination necessary for the dismantlement and demolition phase of decommissioning (e.g., removal of contamination remaining in the fixed structures and equipment after deactivation).	Annual Deferred Maintenance Call Guidance
D&D	Decontamination and Decommissioning; Includes demolition or disposal activities.	Annual Deferred Maintenance Call Guidance
Decommissioning	The process of closing and securing a nuclear facility or nuclear materials storage facility to provide adequate protection from radiation exposure and to isolate radioactive contamination from the human environment. It takes place after deactivation and includes surveillance, maintenance, decontamination, and or dismantlement. These actions are taken at the end of the life of a facility to retire it from service with adequate regard for the health and safety of workers and the public and protection of the environment. The ultimate goal of decommissioning is unrestricted release or restricted use of the site.	Annual Deferred Maintenance Call Guidance
Decontamination	The removal or reduction of residual chemical, biological, or radiological contaminant and hazardous materials by mechanical, chemical or other techniques to achieve a stated objective or end condition.	Annual Deferred Maintenance Call Guidance
Deferred Maintenance (DM)	As defined in the Statement of Federal Financial Standards #6 is "maintenance that was not preformed when it should have been or was scheduled to be and which, therefore is put off or delayed for a future period. For maintenance costs that are excluded see the FIMS Data Dictionary at http://fims.doe.gov or temporary location at http://65.216.217.68/ The cost of the deficiencies found for each WBS includes all cost adders. (FIMS)	CAIS - System Level Def. Maint.; Summary Condition Report
Deferred Maintenance Flag	An indicator that displays whether the repair/replacement cost is considered deferred maintenance.	CAIS - Inspection Unit Association, Documenting Deficiencies
Deficiency Group	This is a field describing the deficiency assigned grouping.	CAIS - Deficiency Field

Database Field/Operation	Description	Association
Deficiency System	Indicates the deficient subsystems/work breakdown structure for a building, trailer or OSF. Up to 5 systems can be selected. The systems are identified in the order of seriousness or facility condition index (FCI). The system facility condition indexes are not reported in FIMS. (FIMS Definition)	CAIS – Summary Condition report; FIMS- data element
Description (Desc)	A free form data field for entering a description of the IU that better describes what the inspector is looking at.	CAIS - Documenting Deficiencies, Deficiency Field
Design Use	Is a usage code that identifies the original design use that the building/trailer was constructed for. (FIMS)	CAIS – Asset screen
Discipline	A pick list selection defining the type of inspection being performed.	CAIS - Documenting Deficiencies, Inspection Unit Association
Engineered Cost	Def. Maint. Cost developed by in-house or contractor engineering personal.	CAIS - System Level Def. Maint.
Equipment ID	The identification number of the IU being inspected.	CAIS - Documenting Deficiencies, Inspection Unit Association
Estimated (Est) Cost	This is a numeric field where the inspector can enter an estimated cost for the repairs or replacements identified. The default value is $5,000 and can be set by the site to any desired value. Once the limit is surpassed, the estimated cost is no longer the official cost. The administrator can set or change the limit by going to Table Maintenance/Inspector Estimate List and adjust the cost limit.	CAIS - Documenting Deficiencies, Costing Overview
Excess Date or Excess Year	Is the fiscal year in which the Field Office/Site designates the property as Excess. (FIMS)	CAIS – Asset screen,
Excess Flag or Excess Indicator (Property)	Indicates (yes/no) that the Field Office/Site has designated the property as Excess now or will be Excess in the future. (FIMS)	CAIS – Asset screen
Facilities Maintenance & Repair Cost Book	This is a RS Means publication available in CostWorks that is the basis for estimating sustainment costs. This book contains over 10,000 unit price items dealing with facility repairs, replacement costs and preventative, predictive, and general maintenance costs and auditing information.	CostWorks - Sustainment Calculator

Database Field/Operation	Description	Association
Facility	Land, buildings, and other structures, their functional systems and equipment, and other fixed systems and equipment installed therein, including site development features outside the plant, such as landscaping, roads, walks, parking areas, outside lighting and communication systems, central utility plants, utilities supply and distribution systems, and other physical plant facilities. These include any of the DOE-owned, -leased, or –controlled facilities, and they may or may not be furnished to a contractor under a contract with DOE.	CAS Program
FCI	The facility condition index (FCI) is the ratio in percent of Deferred Maintenance cost to the facility's replacement plant value. The cost of deferred maintenance deficiencies is determined in CAIS. The replacement plant values of the WBS cost is based on RS Means CostWorks model data. The building replacement value uses the Facilities Information Management System or CostWorks information.	CAIS - System Level Def. Maint.,; Summary Condition Report
FIMS	The Facilities Information Management System (FIMS) is DOE's corporate database for real property and trailer holdings as required by the Real Property Asset Management Order 430.1B. FIMS is used to generate annual reports to the General Services Administration (GSA) summarizing the size and cost of DOE's real property holdings.	CAS/CAIS/CostWorks; Property Information
FIMS Cond. Code	CAIS and FIMS use the same condition ratings. The basis of the ratings is the FIMS Summary Condition field sponsored by the Office of Science. The ratings are excellent, good, adequate, fair, poor and fail. The ratings originally appeared in the CAS Manuals issued in 1993. See Summary Condition code definition.	CAIS - System Level Def. Maint.
FIRP	Facilities and Infrastructure Recapitalization Program. NNSA's program for repairing and rebuilding their buildings and infrastructure systems.	Annual Deferred Maintenance Call Guidance
Frequency	This is a field in the sustainment cost report that indicates the time interval when repairs and replacement work should occur for a CostWorks model assembly.	CostWorks - Sustainment Cost
FY Baseline	This is a report that provides the deferred maintenance, rehab and improvement costs or both and the official costs to repair or replace the deficiencies of an inspection unit (IU) A report can be generated by using the File/Print commands.	CAIS User Guide - Special Features/Products, Documenting Deficiencies

Database Field/Operation	Description	Association
Geographical Factor	This is a regional factor that adjusts RS Means cost data for the location of the site or area. This factor modifies data based on RS Means City Cost Index. Costs are based on zip codes or specific cities. The FIMS geographic factor is equal to the CostWorks location weighted average cost multiplier.	CAIS – Deferred Maintenance estimates; CostWorks – RPV models, Sustainment; FIMS - RPV estimates
Gross SF	Is the gross square footage or total floor area of an owned building/trailer in square feet (exterior wall to exterior wall). (FIMS)	FIMS - RPV estimating; CostWorks – RPV estimating
Hazard Category	Identifies the nuclear, chemical, radiological or combination hazard category associated with a building, trailer, or OSF. (FIMS)	CAIS – Asset screen
Importance	This list defines the operational importance of an IU. i.e., primary, mission essential.	CAIS - Documenting Deficiencies
Infrastructure	All real property, installed equipment, and related real property that is not solely supporting a single program mission at a multi-program site or that is not programmatic real property at a single program site.	Annual Deferred Maintenance Call Guidance
Initial Cost	Is the purchase price plus all support costs for land. Total estimate cost on the project data sheets for buildings, trailers, and OSFs. (FIMS)	CAIS – Asset screen
Inspection (Insp) Date	The date the IU was last inspected.	CAIS - Documenting Deficiencies, Inspection Unit Association
Inspection Unit	An IU is a data composite that is utilized in CAIS to support costing and other functions. RS Means publishes annual CAIS compatible costing data that is defined by the IU. This data is utilized by CAIS in its costing algorithms. This field is the most important data element in CAIS.	CAIS - Four Basic Steps of Data Collection
Inspector	Who performed the inspection?	CAIS - Inspection Unit Association
Inspector ID	A pick list selection of the available inspectors. Selecting an inspector identifies who entered or performed the inspection.	CAIS - Documenting Deficiencies
IU Level Reports	The data in these reports is IU information. Very detailed data used by site maintenance staff and project planning/estimators.	CAIS Reports

Database Field/Operation	Description	Association
Last R&R	The last repair & replacement year is a field used in the CW sustainment calculator to indicate the year the last repair and replacement was accomplished.	CostWorks - Sustainment Calculator
Last Remodeled Date	The date the IU was last remodeled.	CAIS - Documenting Deficiencies
Last Updated	A system generated date field that logs the date and time an IU was edited.	CAIS - Inspection Unit Association, Documenting Deficiencies
Last Updated By	The individual who last updated the IU deficiency data in CAIS.	CAIS - Inspection Unit Association, Documenting Deficiencies
Location	A pick list selection defining the location of the IU. Up to five free form locations fields may be used to define the whereabouts of this deficiency.	CAIS - Documenting Deficiencies, Inspection Unit Association
Locked Flag	No/Yes flag associated with projects that lock all values when an IU is part of a project. If the IU Locked Flag is Yes indicates IUs cannot be changed and if No means IUs can be changed.	CAIS - Inspection Unit Association
Maintenance	Day to day work that is required to sustain property in a condition suitable for it to be used for its designated purposes, including preventive, predictive, and corrective maintenance. See the annual Deferred Maintenance Call guidance for exclusions.	Annual Deferred Maintenance Call Guidance
Mission Critical Real Property Assets	Land or constructed assets deemed necessary to perform the primary missions assigned to a particular Site. This would encompass any facility or infrastructure predominantly used to perform scientific, production, environmental restoration or stockpile stewardship and without which, operations would be disrupted or placed at risk.	Annual Deferred Maintenance Call Guidance
Mission Dependency	The value an asset brings to the performance of the mission as determined by DOE in one of the following categories: Mission Critical; Mission Dependent, Not Critical; and Not Mission Dependent. (FIMS)	CAIS – Asset Screen, Reports; CW graded approach determinant.
Mission Dependency Program Office	The predominant Program Office that uses a facility or OSF asset and the specific GPRA program activity (from the Government Performance and Results Act) within that office that is supported by the use of that asset. This field is only used by NNSA sites. It provides NNSA specific program linkages to specific programs and program support costs. (FIMS)	CAIS – Asset Screen, reports

Database Field/Operation	Description	Association
Mission Dependent Program Description	Description of the mission dependency program code. (FIMS)	CAIS – Asset Screen, reports
Mission Essential Real Property Assets	Those facilities and infrastructure assets that directly contribute to accomplishment of the program assigned missions or mitigation of environmental, safety, or health issues, which if not available would adversely, impact the mission. (RPAM)	CAIS Reports
Model Type or RPV Model	Is the number and name of the RS Means square foot model that is being used to estimate the replacement cost or sustainment cost. It is taken from a pick list of standard model types based on the construction and use of the Asset. The Model type is used to generate the summary condition or facility condition index for the major building systems or WBS categories. (FIMS)	CostWorks – RPV Models; Sustainment Calculator; FIMS - RPV Models
NSIP Required	Non-standard inspection is required. This involves non-visual analysis.	CAIS - Deficiency Field
Official Cost (Cst)	This is a locked field that shows the official cost to repair or replace the IU identified based on the information entered.	CAIS - Documenting Deficiencies
Optimum Year / Period	The time in the life cycle of an asset when maintenance actions should be accomplished to preserve and maximize the useful life of the asset. The determination is based on engineering/maintenance analysis and is independent of funding availability or other resource implications. (RPAM)	CAIS - Inspection Unit Association, Documenting Deficiencies
Pct.	This is the RPAM Asset Condition Index. ACI= (1 – FCI).	CAIS - System Level Def. Maint.
Pct. Factor	A cost adjustment factor or markup percentage similar to the Site Factor.	CAIS - System Level Def. Maint.
Percentage Cost	This cost is the product of the (WBS Cost x Pct. Factor x Pct)	CAIS - System Level Def. Maint.
Plant, Property & Equipment	Tangible assets that meet the capitalization criteria, that are not intended for sale in the ordinary course of operations, and have been acquired or constructed with the intention of being used, or being available for use by the entity. Plant, property, and equipment includes site infrastructure.	Annual Deferred Maintenance Call Guidance
Post Repair Years	The estimated years of life remaining for the identified IU after the repairs or replacements have been performed.	CAIS - Documenting Deficiencies
Pre Repair Years	The estimated years of life remaining for the identified IU before the repairs or replacements have been performed.	CAIS - Documenting Deficiencies

Database Field/Operation	Description	Association
Predictive Maintenance	Those activities involving continuous or periodic monitoring and diagnosis to forecast component degradation so that “as needed” maintenance can be scheduled. (RPAM)	RS Means FM&R Costbook
Preventive Maintenance	Those periodic and planned actions taken to maintain a piece of equipment within design operating conditions and extend its life and performed before equipment failure or to prevent equipment failure. (RPAM)	CostWorks - Sustainment Calculator
Programmatic Equipment	Refers to personal property used by programmatic personnel, including personal property meeting the threshold for the list of capital equipment.	Annual Deferred Maintenance Call Guidance
Programmatic Real Property	Refers to reactors, accelerators, and similar devices used by programmatic personnel, acquired with line item funding, and listed in the Facilities Information Management Systems as "Other Structures and Facilities" under the 3200 series usage codes, such as 3209, 3221, 3251, 3261.	Annual Deferred Maintenance Call Guidance
Project ID	A number that identifies the project that has been created to repair or replace the deficient systems or components.	CAIS - Documenting Deficiencies, Inspection Unit, Project Formulation
Project Reports	These reports summarize project costs dealing with rehab and improvement costs.	CAIS Reports
Property ID	A unique control number assigned to a property. For GSA assigned properties, use the CBR number from the GSA rent bill. (FIMS)	All CAS/CAIS Tasks; CostWorks - Sustainment Cost, Model development
Property Name	Is the name assigned to a specific property. (FIMS)	CAIS and FIMS identifier
Quantity	The quantity i.e., linear feet, sq feet, and cubic feet, for entering the quantity of the item identified.	CAIS - Documenting Deficiencies; CostWorks Assemblies

Database Field/Operation	Description	Association
Real Property Assets	Any interest in land, together with the improvements, facilities, structures, and fixtures located thereon, including prefabricated movable structures and appurtenances thereto, under the control of DOE. All real property owned by or leased to the Government or acquired by the government under there terms of the contract. It includes both government-furnished property and contractor-acquired property as defined in federal Acquisition Regulation 45.101. DOE-owned, -used and -controlled land, land improvements, structures, utilities, installed equipment, and components are included. Real property and real estate means land and rights in land, ground improvements, utility distribution systems, and buildings and other structures. Real Property Assets are defined by the Federal Property Management Regulations 101-47.103-12, Real Property.	Annual Deferred Maintenance Call Guidance
Recapitalization	Major renovations or reconstruction activities, including facility replacements, needed to keep existing facilities modern and relevant in an environment of changing standards and missions. This includes the restoration and modernization of existing facilities but not the acquisition of new facilities or the demolition of old ones, unless the demolition is carried out as part of a renovation project or in conjunction with construction of replacement footprint elsewhere.	Annual Deferred Maintenance Call Guidance
Regular (Inspectors, Data Entry)	Conduct the condition assessment of the DOE real properties. They usually come from the shops or trades offices within the facilities or plant management departments. They should be highly skilled in their trades. They complete the Field Data Collection Sheets and may enter the data into CAIS. They do the pre-inspection planning and conduct the inspection.	CAIS User Guide - User Roles
Repair	The restoration of failed or malfunctioning equipment, system, or facility to its intended function or design condition. Repair does not result in a significant extension of the expected useful life. (RPAM)	CAIS - Inspection IU:
Repair Cause	A list of probable causes for the deficiencies.	CAIS - Documenting Deficiencies
Repair Cost	This is based on the deficiencies selected and the severity coverage of the deficiencies. It is used as the official cost if there is no inspector-estimated cost within the user-defined limit and there is no specified replacement quantity. The cost is based on algorithms developed by Parson Brinckerhoff, the CAS/CAIS engineering advisor. This is a locked field that shows the cost to repair the IU.	CAIS - Costing Overview, Documenting Deficiencies
Repair Purpose	A list that identifies the purpose for correcting the deficiencies. i.e., efficiency, code violation.	CAIS - Documenting Deficiencies
Repair Symptom	A list of common repair or replacement symptoms.	CAIS - Documenting Deficiencies

Database Field/Operation	Description	Association
Repair Task	A list of standard tasks required to correct deficiencies. i.e., patch, resurface.	CAIS - Documenting Deficiencies
Replacement Quantity	A numeric field for entering the quantity of the IU to be replaced.	CAIS - Documenting Deficiencies
Replacement (Repl) Cost	This is a locked field that shows the cost to replace the replacement quantity selected. It is computed if there is a replacement quantity specified in the IU window. This cost equals the replacement quantity times the RS Means unit cost of the IU.	CAIS Costing Overview; Documenting Deficiencies
Replacement Plant Value	Cost to replace the existing structure with a new structure of comparable size using current technology, codes, standards, and materials. (RPAM)	CAIS Costing Overview; Documenting Deficiencies; CostWorks Models
Responsible HQ PO or HQ Program Office	Is the DOE headquarters program office responsible for buildings, trailer, land or OSF and their operations (SC, EM, etc.). (FIMS)	CAIS – Asset screen, Reports
RIC Flag	Specifies if this deficiency falls under the Rehab and Improvement Cost (RIC) category. RIC is the cost to rehab/improve/modernize a general purpose/conventional property to support current/planned mission activities as documented in the Ten Year Site Plan. RIC is not deferred maintenance. (FIMS)	CAIS - Inspection Unit Association; Documenting Deficiencies
RIC Type	A list that identifies the type of RIC cost. i.e., fire safety, upgrade, seismic.	CAIS - Documenting Deficiencies, Inspection Unit Association
Service	A list of service requirements for the IU. i.e., intermittent, continuous, stand-by.	CAIS - Documenting Deficiencies
Site	Is the name assigned to a geographic location that is a subdivision of the Field Office. (FIMS)	CAIS, CostWorks, FIMS identification field
Site Defined	A user-defined field lookup list customized to the conditions of the particular site.	CAIS - Documenting Deficiencies

Database Field/Operation	Description	Association
Site Factor (SF)	A site number that is applied to the product of the model unit cost, RS Means geographical adjuster and gross square footage. It is based on markups or multipliers related to construction projects. Examples of markups that would be included in a site factor are architect and engineering fees, project management fees, general requirements, contingency and escalation factors. In FIMS the site factor is a multiplier and not normally a percentage. However, CostWorks treats the SF as a percentage. Example - a SF of 1.4 would be treated in CostWorks as 40%. (See the FIMS User Guide, Attachment F, RPV Guidance)	CostWorks – RPV Model Estimating; FIMS RPV formula.
Site Level Reports	These reports summarize all asset deficiency cost information into one detailed report by site or area.	CAIS Reports
CostWorks Sq. Ft. Models	An RS Means Costbook dealing with typical building structures consisting of residential, commercial, industrial, and institutional models. It is the basis of the DOE generic and custom RPV models in CostWorks and FIMS.	CostWorks – RPV estimating, Sustainment cost estimating.; FIMS – RPV models; CAIS – Summary Condition Reports
Status	A list that defines the status of the Repairs or Replacement for the IU.	CAIS - Documenting Deficiencies, Inspection Unit Association

Database Field/Operation	Description	Association
Status (FIMS)	This FIMS field reflects programmatic intentions as well as the predominant physical/operational status of an asset. The selections are as follows: 1 – Operating- A building, trailer or OSF that is required for DOE's current and on going needs and responsibilities. 2 – Operation Standby – If there is any future programmatic use of the building, trailer, or OSF (other than cleanup) expected. 3 – Shutdown Pending Transfer – Indicates the building, trailer or OSF is to be planned for eventual transfer to another programmatic office or organization. 4 – Shutdown Pending D&D – indicates the building, trailer or OSF has been shutdown for the purpose of eventual D&D (regardless of when D&D activities are slated to start). Under this category, the programmatic office or organization responsible for this building, trailer, or OSF. 5 – D&D in Progress – D&D activities are underway for the building, trailer or OSF. This activity would be indentified once funds have been budgeted and approved for expenditure. 6 – Operating Pending D&D – Indicates the building, trailer, or OSF has been transferred to the programmatic office or organization responsible for D&D activities. The building, trailer, or OSF is being used for site cleanup activities. 7 – Operating under an Outgrant – A building, trailer, land, or OSF being used by another party through means of a lease, easement, license, or permit. 11 – Deactivation – A building, trailer, or OSF that has completed or is undergoing the process of placing it in a stable and known condition including the removal of hazardous and radioactive materials to ensure adequate protection of the worker, public health and safety, and the environment, thereby limiting the long-term cost of surveillance and maintenance. 12 – Shutdown Pending Disposal – Indicates the building, trailer, or OSF has been identified for eventual disposition. The process to report the building, trailer or OSF as excess to the Department's needs has been either started or completed.	CostWorks Graded Approach Sustainment identifier.

Database Field/Operation	Description	Association
Summary Condition	The ratio of Deferred Maintenance to Replacement Plant Value (RPV). The purpose of the field is to determine the condition of the assets structure & systems. The summary condition ratings are the following: Excellent: DM < 2% of RPV, Good: DM is 2 - <5% of RPV, Adequate: DM is 5 - <10% of RPV, Fair is 10- <25% of RPV, Poor: Major DM is 25 - <60% of RPV, & Fail: Replacement is required DM cost >/= 60% of RPV. Also have Not Applicable - Shutdown Pending D&D, etc. and some are blank if: Sale, Demolished, Operating under an Outgrant, & Transfer to Another Federal Agency.	From FIMS used in CAIS.
Summary Condition Reports	This report provides summary deferred maintenance costs and facility condition indexes of WBS systems. Used by planners and Headquarters to review the condition of very important/mission essential facilities. This provides a good comparison of assets that have the same mission and various ages. This report can be generated at the site, area, and asset level.	CAIS Reports
Sustainment Cost	Maintenance and repair activities necessary to keep the inventory of facilities in good working order. This includes regularly scheduled maintenance as well as anticipated major repairs or replacement of components that occur periodically over the expected service life of facilities. The RS Means CostWorks program contains a sustainment calculator estimating tool to use with their Sq. Ft models.	CostWorks – RPV Models; TYSP – Reports; FIMS – Annual Required Maintenance Cost
Ten-Year Site Plan (TYSP)	A planning document that identifies the site's annual and strategic program requirements and priorities, and links these to real property asset requirements. Real property asset requirements must be consistent with program missions, budgets, and planning estimates. Planning employs costing efficiencies, eliminates excess building, consolidates operations where practicable, and addresses mission-critical requirements through an approximate mix of recapitalization, new construction, and disposal of excess facilities. (RPAM)	CostWorks - Sustainment Costs; CAIS- Deferred Maintenance Cost
Tracking Number	A system generated unique number for the Inspection Unit identified. This unique number can be used to track the IU unit until it is corrected. This field is locked and cannot be edited.	CostWorks - Inspection Unit Association, Documenting Deficiencies
Tracking Work Order	The maintenance management system work order number that is associated with the IU.	CAIS - Documenting Deficiencies
Type	A pick list selection based on the component selected. The Type and Component define the Inspection Unit or the item being inspected. The type also links to the cost tables. Components can contain additional information that usually specifies material or construction detail (i.e., *copper* FLASHING). The types also have costing information.	CAIS - Inspection Unit Association, Documenting Deficiencies, Four Basic Steps of Data Collection

Database Field/Operation	Description	Association
Urgency	A list or predefined time periods when the repairs or replacements should be made.	CAIS - Inspection Unit Association, Documenting Deficiencies
Usage or Use Code	Is a number code that designates the predominant current use of a real property asset. (FIMS)	CAIS - Asset screen, Reports
View	A role that permits CAIS viewing rights. They can generate reports but not change any report data. This role is normally for facility managers and project developers.	CAIS User Guide - User Roles
VOL. Volume Name;	This is the CAS Work Breakdown Structure Uniformat II volume and number and name. It is found in a standard pick list selection based on the twelve (12) building systems from RS Means. Selecting a volume filters the WBS selections.	CAIS - System Level Def. Maint., Documenting Deficiencies
WBS Cost	The total cost of the WBS is based on the percentage of this system in the CostWorks and FIMS Model Type. The percentage generates a Replacement Plant Value (RPV) of the WBS.	CAIS - Summary Condition Report, System Level Def. Maint.
Work Breakdown Structure (WBS)	A hierarchical, industry standard, classification method of defining systems and sub-systems within an asset. For example, the high-level system ROOFING contains 10 sub-systems including "BUILT-UP MEMBRANE", "SINGLE-PLY MEMBRANE", "METAL ROOFING SYSTEMS". CAIS uses a pick list selection methodology to facilitate system selections. See the WBS Uniformat II chart for further clarification.	CAIS - Four Basic Steps of Data Collection, Documenting Deficiencies
Year (Yr) Installed	The date the IU was first installed.	CAIS - Documenting Deficiencies
Year Built	For DOE construction, the fiscal year that a building/trailer is accepted for beneficial occupancy. If acquiring an existing building/trailer, it is the fiscal year that a building/trailer was constructed (best estimate if unknown). (FIMS)	CAIS – Asset Screen, CAIS Reports field.
The terminology listed in this table has been compiled from the DOE CAS program, CAIS database, FIMS database, the RPAM Order, and RS Means Costbook.		

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